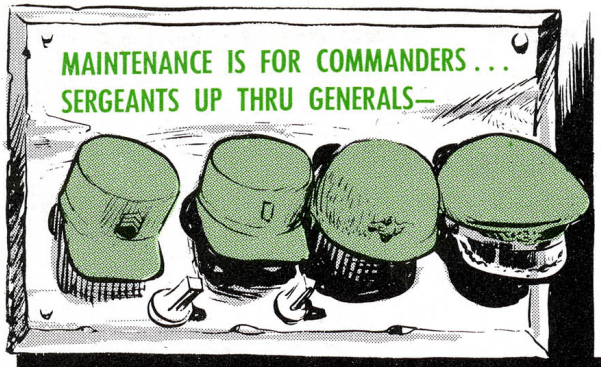
Issue 93
PS
1960 Series
THE PREVENTIVE MAINTENANCE MONTHLY
DOES HE TAKE A FORM 20 OR A 478?
KNOCK AND UNCOVER
MOSTEST WITH BESTEST
CUBE HERE
NCO'S OFF POST
COMPANY S.O.P
DA DUTY
SGT/M ONNA BAWL
FIRST THREE GRADERS ONLY
WILL EISNER
SPECIAL ARTICLE
DA FORM 478
SEE PAGE 29



Half-Mast

Every once in a while Half-Mast gets wound up writing a letter and really sounds off. The other day he was answering a question from a man about

Dear R.M.,

Like I was saying to Connie the other day, this business of Preventive Maintenance is the responsibility of commanders at all levels. Take a look at AR 750-5.

Which means, of course, you...whether you're wearing stars on your shoulder or stripes on your sleeve. Preventive Maintenance will never get done unless you give it the extreme emphasis it must have in order for your command to be a fighting--and winning--unit should a hot war come.

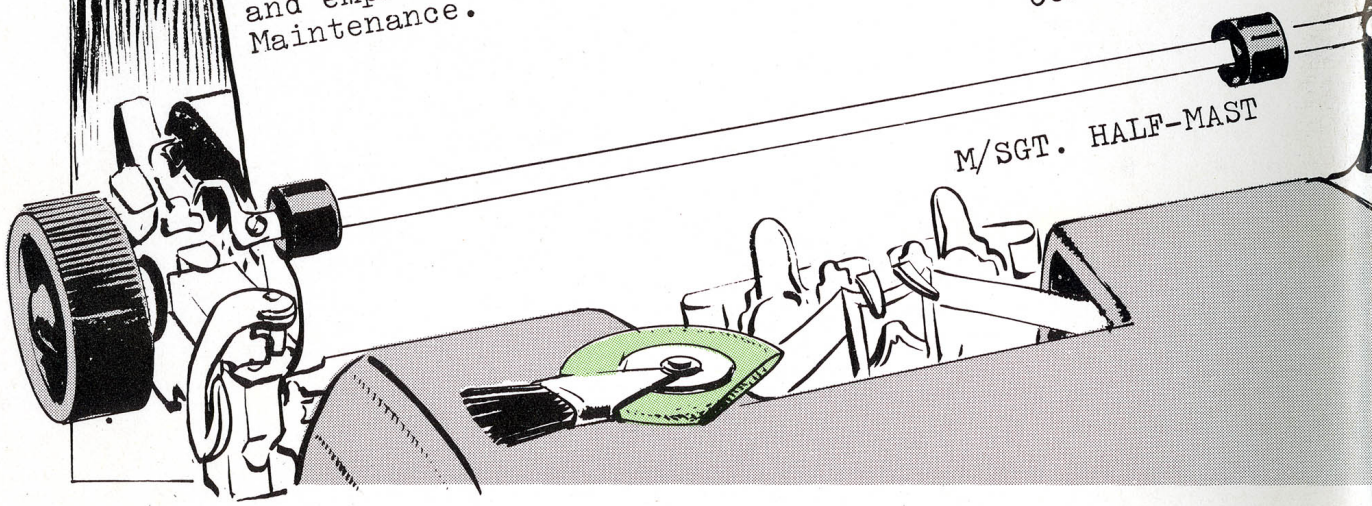
An army is made up of men and machines. Men alone will win no battles in the 20th century. Men and machines --properly maintained machines--can and will win battles.

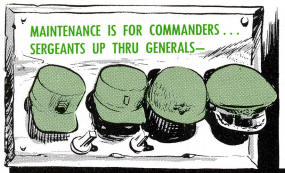
The question is: Will the victorious men and machines be yours?

The answer depends to a great extent on the interest and emphasis you, as a commander, give to Preventive Maintenance.

Cordially,

M/SGT. HALF-MAST





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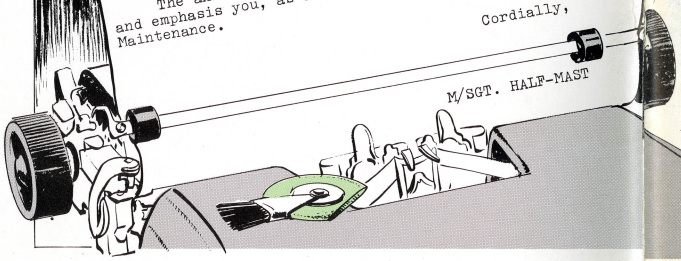

W*r*i*t*e*s

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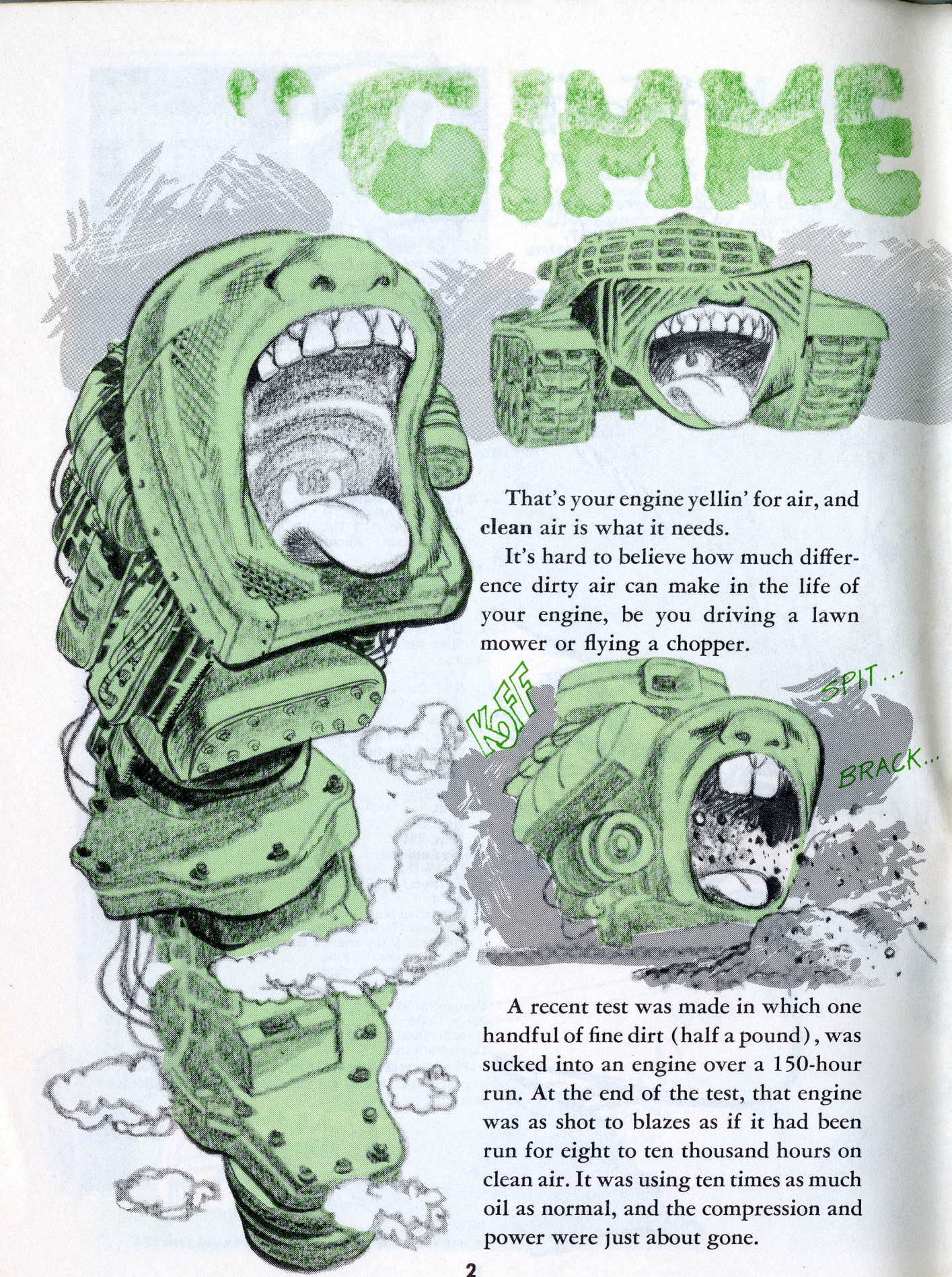
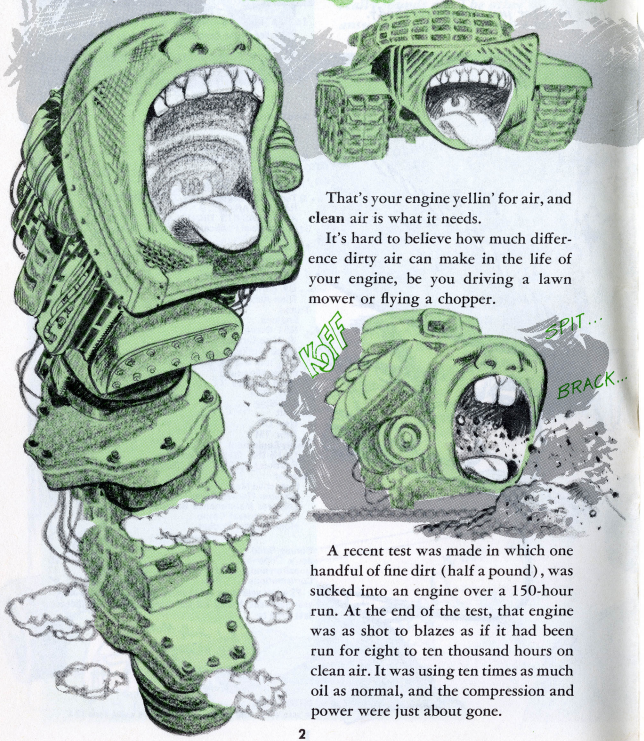

"GIMME
That's your engine yellin' for air, and clean air is what it needs.
It's hard to believe how much difference dirty air can make in the life of your engine, be you driving a lawn mower or flying a chopper.
KOFF
SPIT...
BRACK...
A recent test was made in which one handful of fine dirt (half a pound), was sucked into an engine over a 150-hour run. At the end of the test, that engine was as shot to blazes as if it had been run for eight to ten thousand hours on clean air. It was using ten times as much oil as normal, and the compression and power were just about gone.

"GIMME AIR!"



That's your engine yellin' for air, and **clean** air is what it needs.

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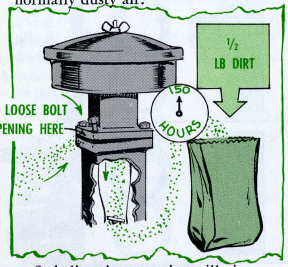
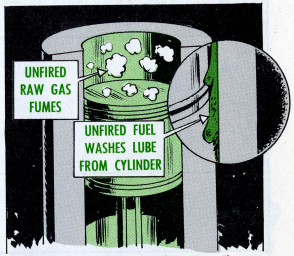
OK, you know you aren't gonna deliberately run dirt into your engine, but here's the rub: It would only take about a ⅛-in hole in your air cleaner or the air ducts between the air cleaner and the carburetor to let that much dirt in from normally dusty air.



So believe it, no engine will give you satisfactory life if it is fed anything but clean, filtered air.

Another thing—even if your filter and ducts are all tight, a dirty filter element can choke down the air flow. And that's just like running with your choke pulled part way out. Your engine economy goes up in smoke (black smoke, up the exhaust stack) and the extra fuel doesn't all get burned. Some of it sticks



around to wash the lube oil off your cylinder walls—which wears out your engine before its time.

So please to check your whole air filtering system to be sure it's clean and tight, and then keep it that way. Under the worst of dusty conditions, you'll do well to clean (or at least check) your filters about every four hours of operation or whenever you fuel up.

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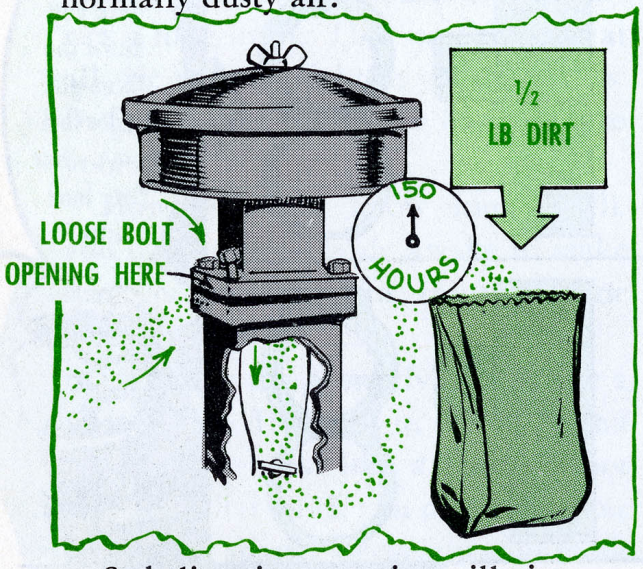

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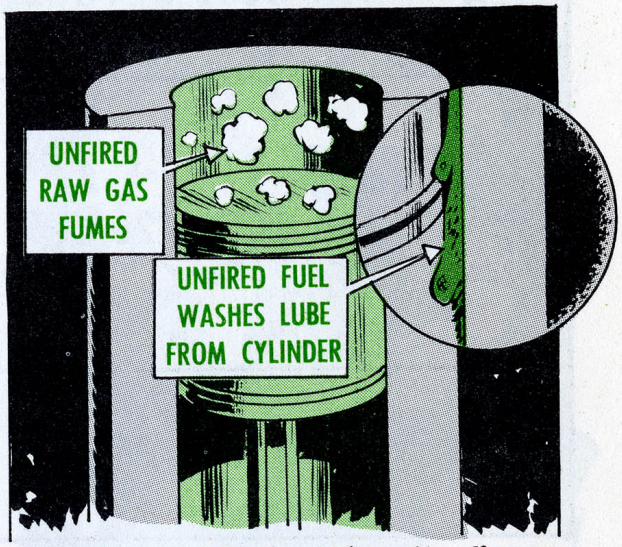

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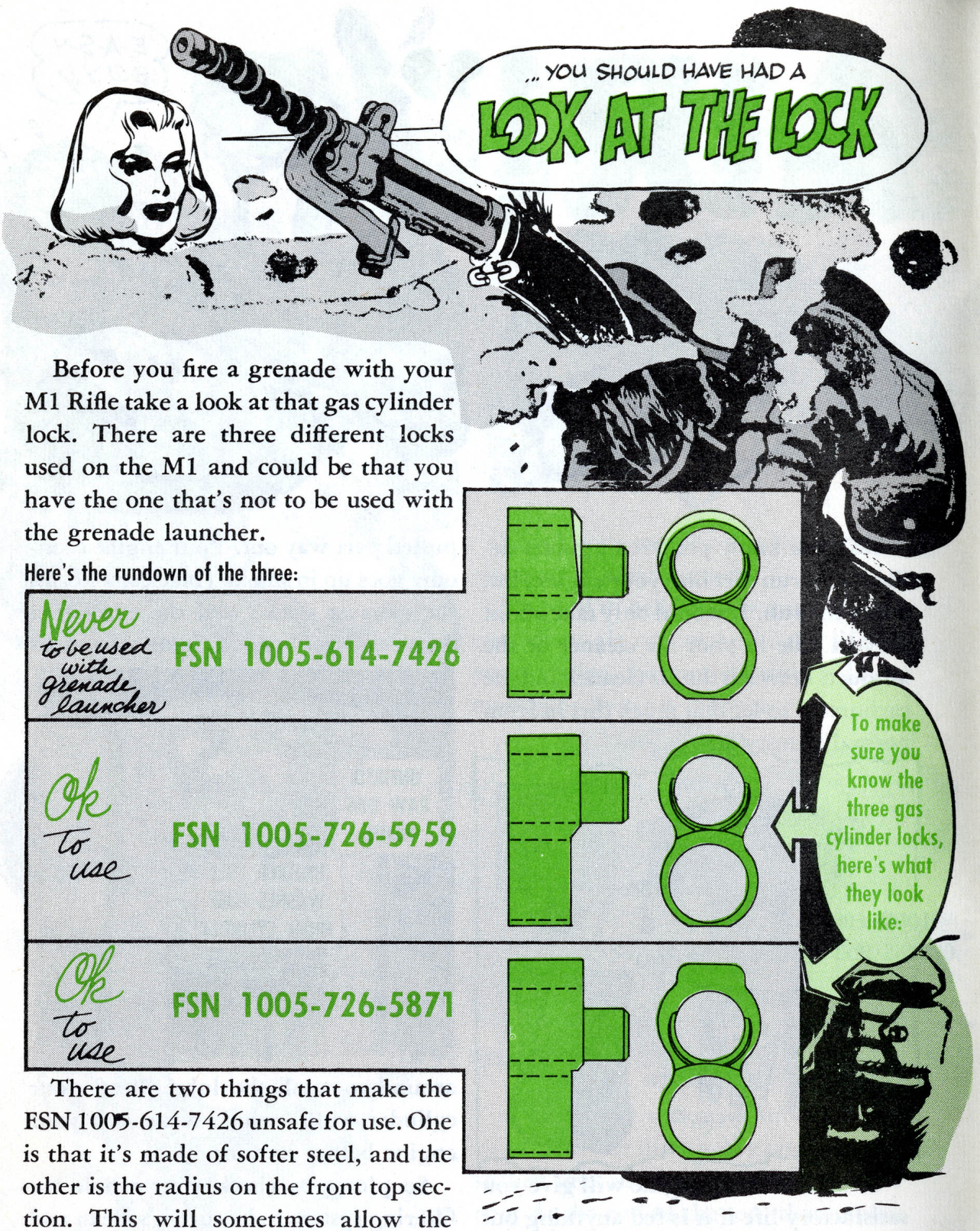


Before you fire a grenade with your M1 Rifle take a look at that gas cylinder lock. There are three different locks used on the M1 and could be that you have the one that's not to be used with the grenade launcher.

Here's the rundown of the three:

Never to be used with grenade launcher **FSN 1005-614-7426**

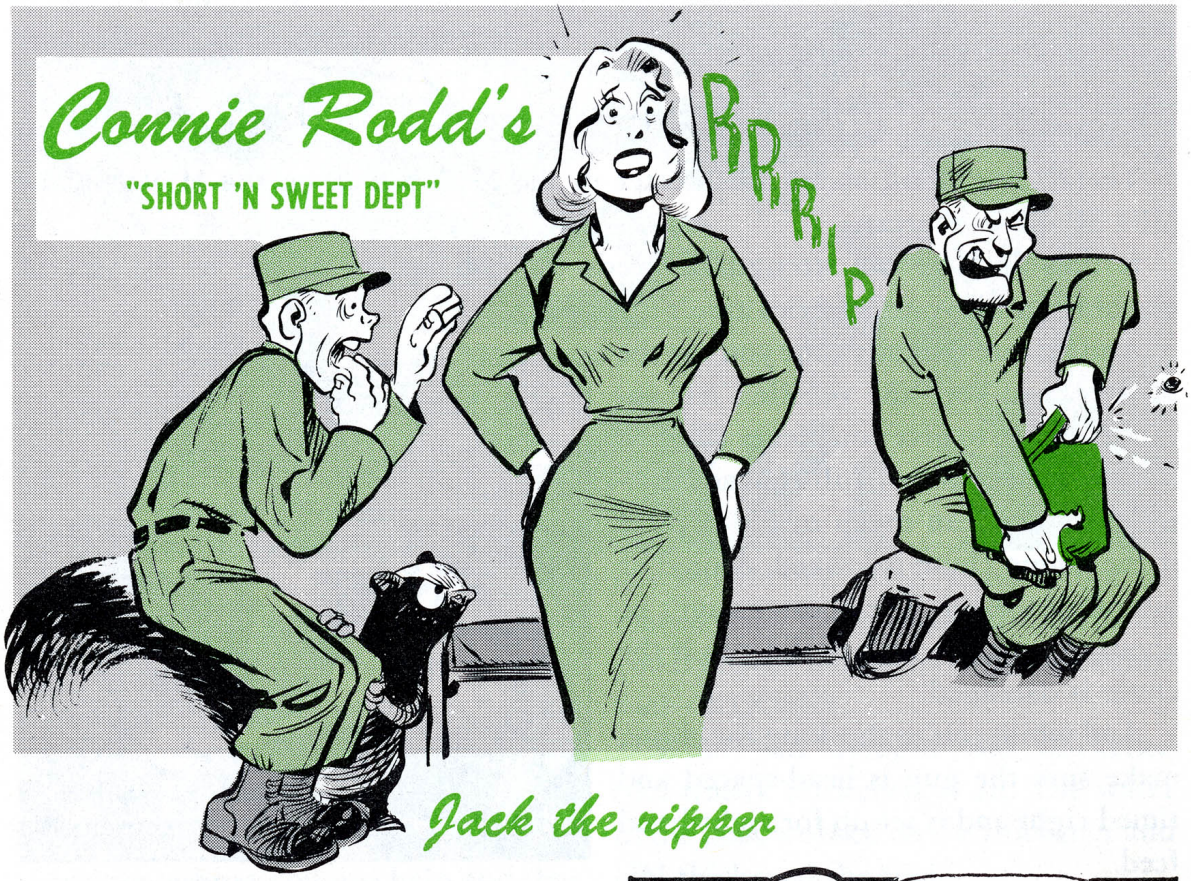
Ok to use **FSN 1005-726-5959**

Ok to use **FSN 1005-726-5871**

To make sure you know the three gas cylinder locks, here's what they look like:

There are two things that make the FSN 1005-614-7426 unsafe for use. One is that it's made of softer steel, and the other is the radius on the front top section. This will sometimes allow the launcher to become cocked on the rifle. When that happens and a regular round is fired, the projectile could strike the launcher which could damage your piece or you.

The grenade launcher is issued with either lock 1005-726-5959 or 1005-726-5871—and the grenade launcher must always be used and stored with either of these two locks.



Jack the ripper

You may think Jack the Ripper is a villain with a black moustache and carries a long knife. That isn't the case at all. He may be right in your barracks. In fact, he may be in the bunk next to yours.

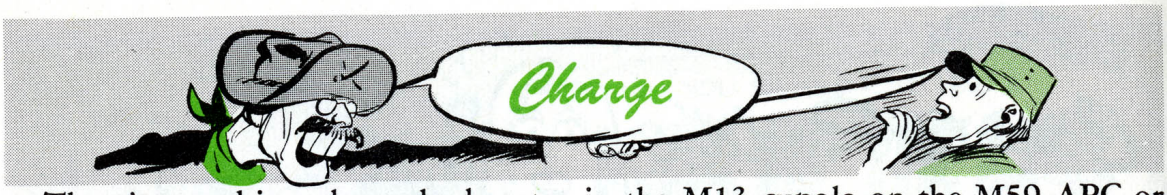
How will you know him? Well, you'll have to be wide awake to make sure you can spot him. Here are some clues that should help.

He treats his protective mask like a poor cousin. He boots it, sits on it, and throws it around like a football—not realizing that when you dent a canister or crack or shatter an eyelens your mask might not work.

Here's how he got his name of Jack the Ripper. His special trick is ripping the tabs (they're listed as sockets and studs in your TM 3-4240-204-15P) out of his mask's carrier. Instead of taking hold of the middle tab and pulling on it

—to unfasten the end tabs, too—he grabs hold of the end tab and yanks. He rips the tabs right out of the canvas.

You'd be doing Jack a favor if you'd wise him up as to how to unfasten his carrier.



There's one thing about the booster in the M13 cupola on the M59 APC or M84 SP 4.2-in mortar.

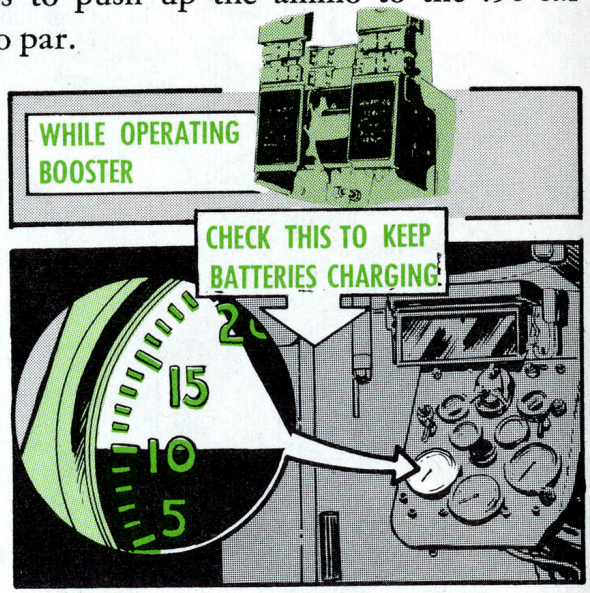
It doesn't have the strength it needs to push up the ammo to the .50-cal machine gun if your batteries aren't up to par.

And be sure that any time you use the booster, you keep the vehicle's left engine running to give you plenty juice.

Don't forget, tho, full-charged batteries don't mean much to the booster if the ammo chute is kinked, dented or out of alinement. The booster won't be about to get the ammo to the gun if the chute is damaged.

And while you're checking the chute, make sure the gun is head-spaced and timed right and is set up for right-hand feed.

In other words . . . there's more'n one reason for feeding troubles.



The engine wants to run—at 1000 minimum RPM and 2000 maximum RPM—to keep the alternator generating.

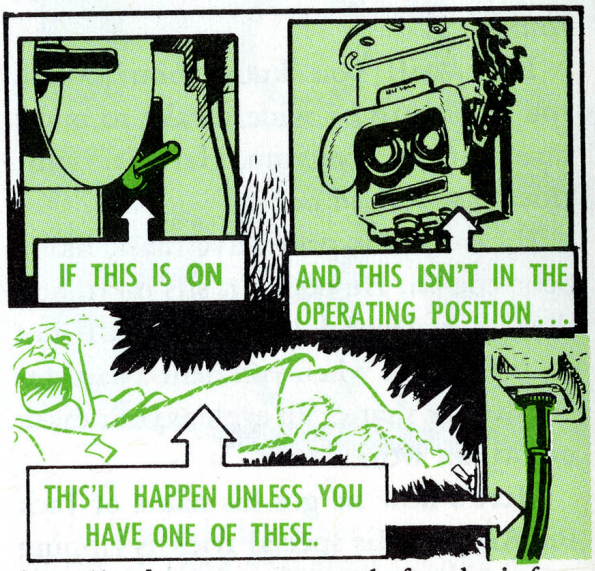
Stop that shock

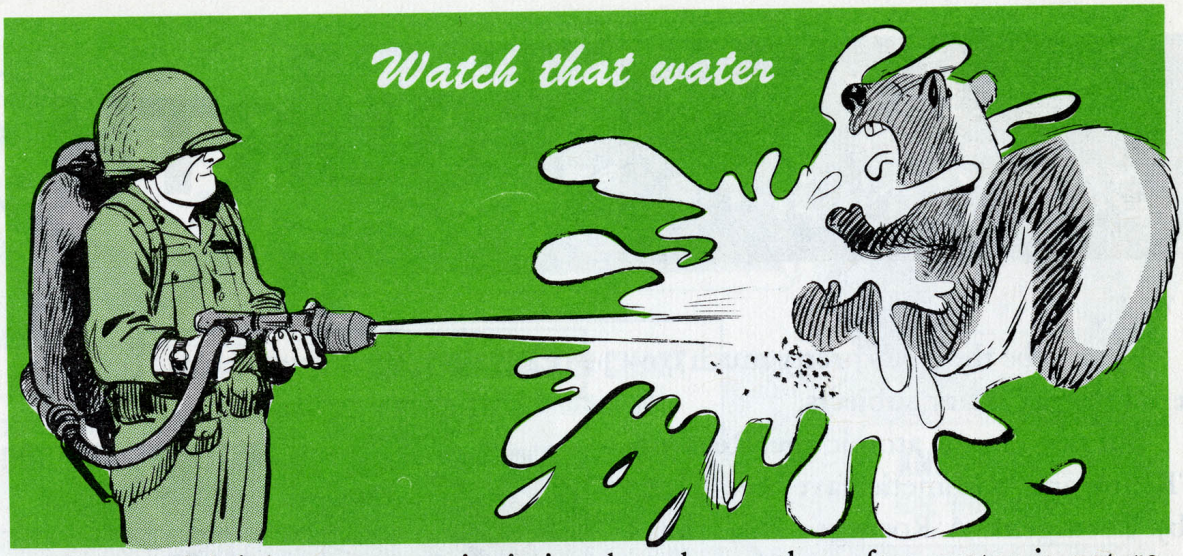
You'll really be in the dark if you accidentally turn ON the infrared power pack in your M59 APC or M84 SP mortar—if the infrared periscope doesn't happen to be in the operating position.

All kinds of shocking things can happen if this comes off:

Like arcing or getting yourself a shot of electricity or doing damage to the infrared power pack.

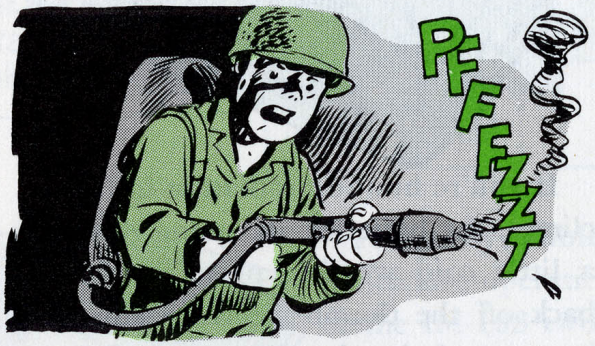
What you might do is remind your Ordnance support outfit to apply **URGENT** MWO 9-2300-203-30/1 (18 Dec 59). This modification tells how to install a dummy receptacle for the infrared periscope feed cable for M59's below serial number 4955 and M84's with serial numbers under 571.





You can drink it, you can swim in it, you can even use it to put out fires. That's right: Water! But it's also one of the greatest trouble-causers in this man's Army.

Sometimes dampness sneaks into your equipment and you can't help it. But there's one thing you can help and that is putting water into your equipment when it doesn't belong there.



Take the case of the mechanized flame thrower. After it was steamed cleaned the main fuel tank wasn't thoroughly dried on the inside. The next time it was fired—it sputtered and spit. The water caused the thickened fuel to break down in the container and bugged the firing.

So you say: What about the portable flame thrower. TM 3-376 says you can use water instead of fuel in the M2A1 for practice firing. True, but experience has shown that often water is not removed from the tank and the next time you try to fire that M2A1 with thickened fuel—WOOSH!

What you thought was thickened fuel wasn't thickened at all. The water in the tank worked on the thickener and UN-thickened the fuel.

So don't test fire with water. Use diesel fuel instead.

Also, water (or even moisture) will foul up the thickener if it gets into it. So keep those containers of thickener closed when you're not using them.

LET'S COMMUNICATE

THE FOURTH "R"

Used to be the 3 R's pretty much covered the necessary subjects.

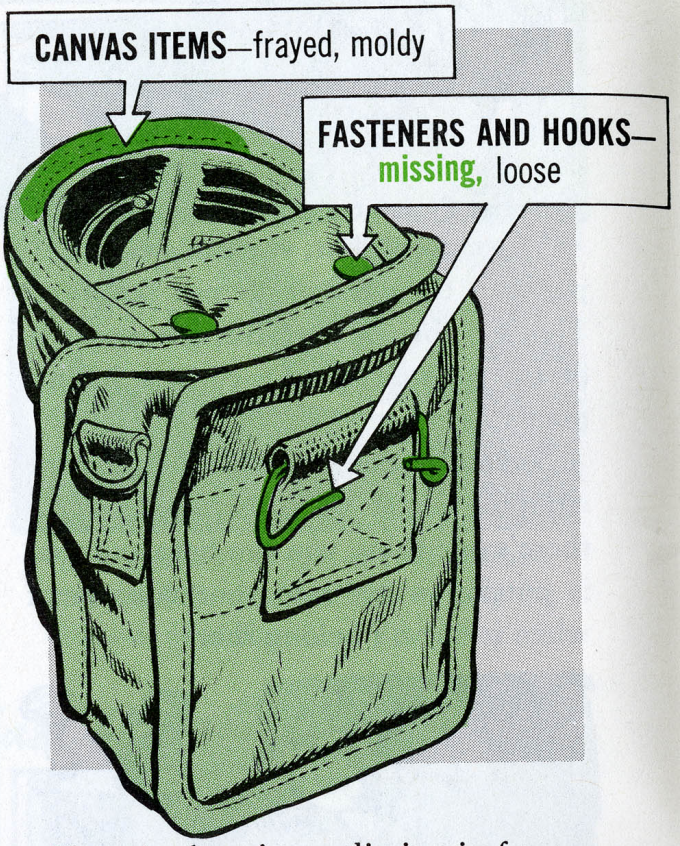
But now, in the atomic age, Reading, 'Riting and 'Rithmetic have been joined by Roentgens. A Roentgen is a unit of measurement of Gamma Ray Radiation from a source such as a nuclear or hydrogen bomb—or an X-ray machine. There's a limit to the amount of radiation your body can take before it sort of flunks out of the course.

So the Army's basic "grade-card" on the subject—the IM-108/PD Radiacmeter—is the standard field radiation detection equipment that stands ready to tell a man when danger's lurking around or near.

It smells out gamma radiation (the most dangerous form of nuclear radiation) and gives readings at both high and low levels of intensity. F'rinstance, it'll go as high as 500 Roentgens per hour. And with the use of the conversion chart, it can reach as low as 0.1 Roentgen per hour with acceptable accuracy.

This Be-Your-Own-Inspector examination will help guarantee a top mark in efficiency and operation for your Radiacmeter. Sort of keep an eye open for these deficiencies:

The items in **bold type** are major deficiencies, meaning the meter cannot be operated properly or is not safe to use.



If you're hunting radiation in frosty climes, the batteries are going to need a little cold weather protection. Just back off the thumb screw . . . slip the box out of the chassis . . . and slide it under your coat.

Body heat will give the batteries the help they need so's to put out in icy weather—and you'll still have enough cable to allow freedom of movement of the 108.

Speaking about batteries, always make sure the **Zero Control** switch is turned to the OFF position whenever the Radiacmeter is not being used.

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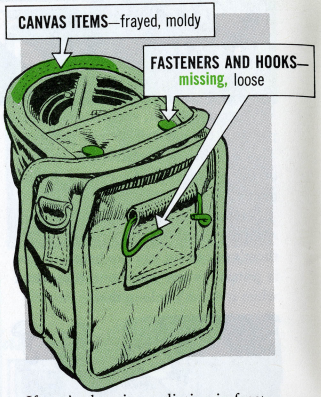

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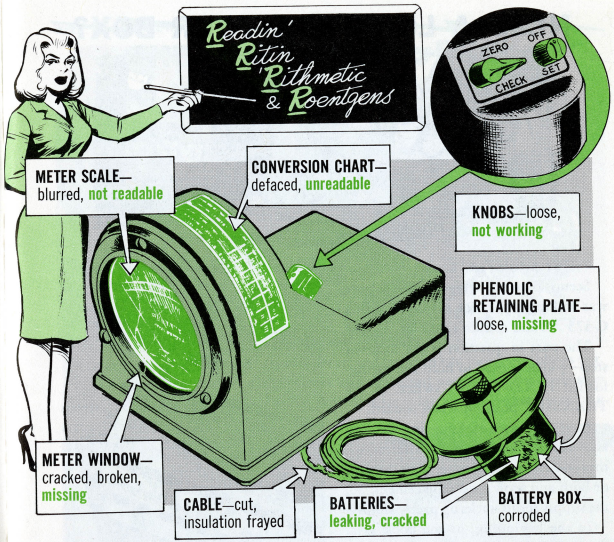
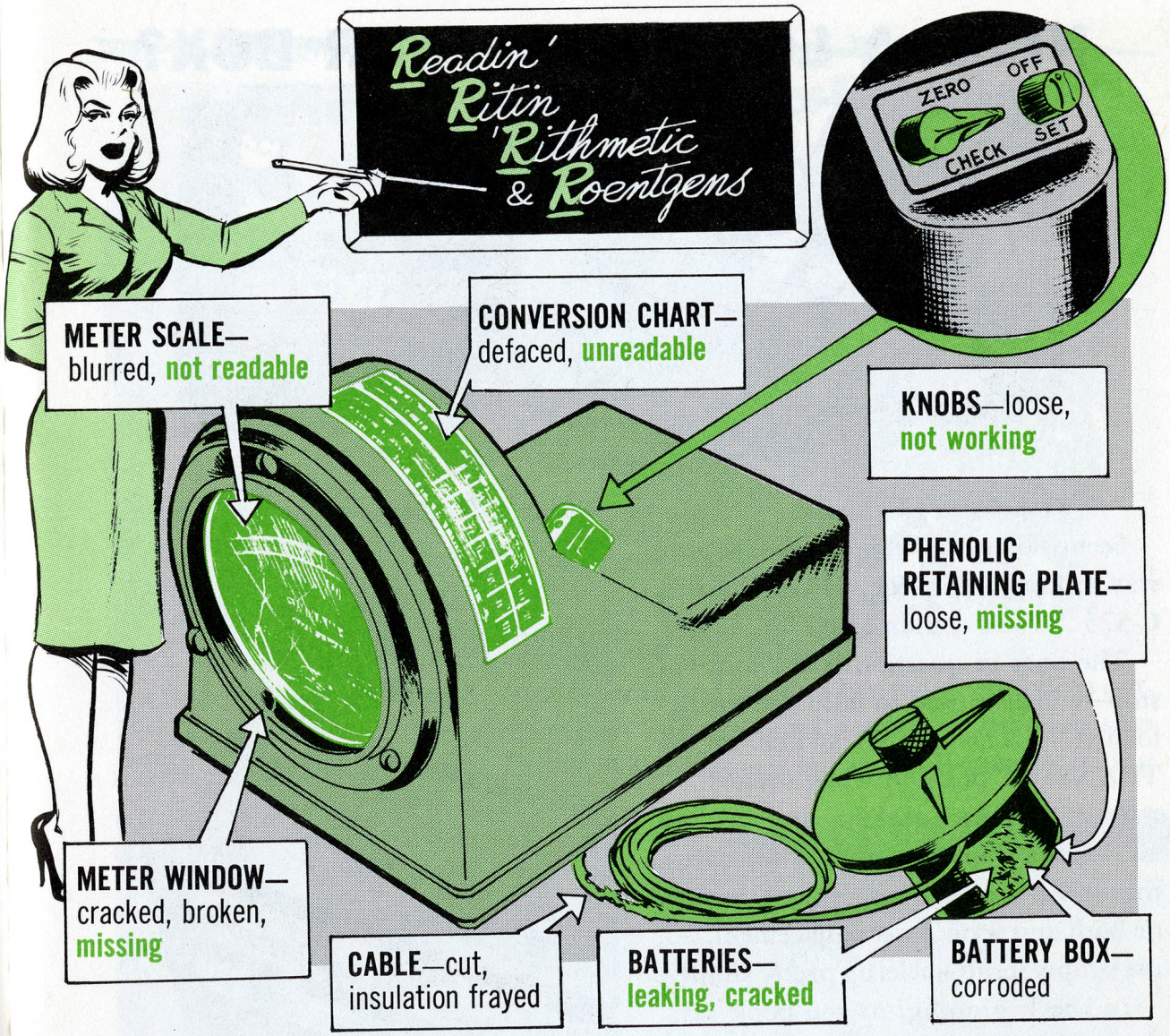


Naturally, publications play a top role in proper maintenance and operation of any piece of equipment. In the case of the IM-108 two thin pubs play that role.

One is the technical manual itself—TM 11-6665-200-12 (Nov 58). T'other is TM 11-6665-200-12P (31 July 59) which includes your organizational maintenance repair parts and special tools as well as the Maintenance Allocation Chart or MAC as it's called.

MAC says just what maintenance you can handle within your own unit without having to send the piece of equipment to the shop. In the case of the IM-108 first and second echelon maintenance is limited mostly to replacing batteries, knobs and cases.

Whenever you send a meter back, it's on a one-for-one basis. You get an operational one in return.



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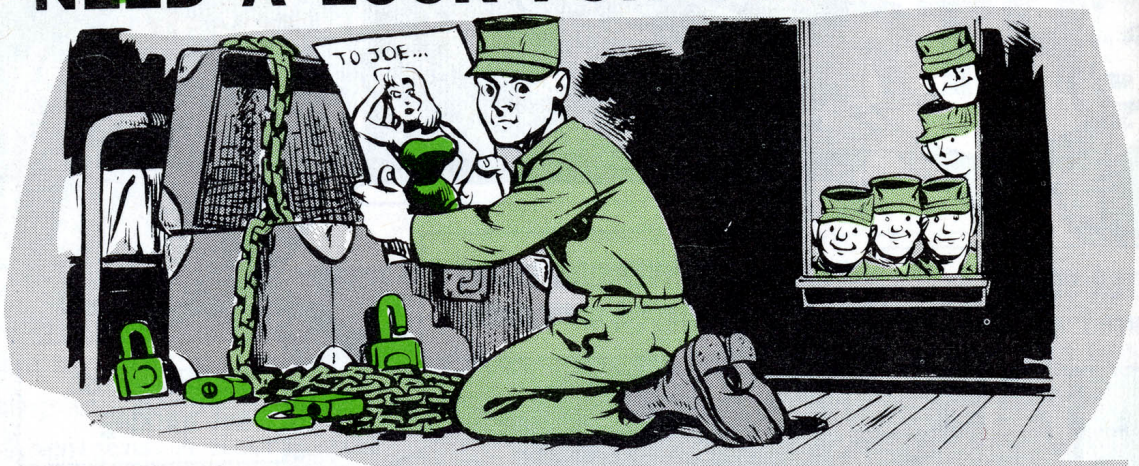
NEED A LOCK FOR YOUR BOX?



"%#$('&!%!&#!&'#! . . ."

Seems that the gent quoted above was seeking a part for his Control Box C-375 . . . and couldn't find it.

The part in question is the lock—or stop—which is used to hold the spring-loaded HOLD-TRANS switch in the TRANSMIT position when needed.

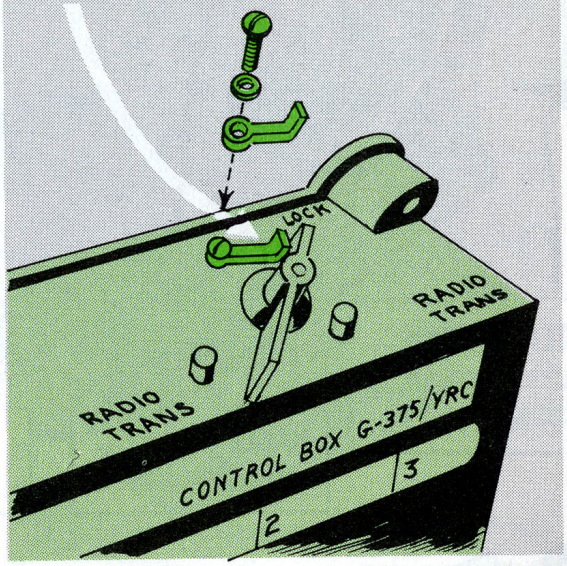
In the course of bouncing around and being handled and mishandled, that locking piece can get bent, broken or both and soon need replacement. So, the supply setup stacks up pretty simply.

In the beginning, as the book says, the lock didn't rate a listing in the SIG 7&8. It still lacked a listing when TM 11-5830-203-12P (12 Dec 58) hit the field.

About now, it seems, the complications started to show up. Many a unit needed a new lock, but couldn't find authorization to requisition one. Familiar problem. So, along came a much-needed Change 1 to the basic TM which squared things away.

Could be that some men with lock box problems may not have seen this Change 1, dated 26 June 59. It lists just one thing:

STOP, ELECTRICAL SWITCH: 2/32 in lg x 9/32 in w x 1/4 in h o/a FSN 5930-548-6758



The **STOP**, is an asterisk (*) item, which means it's procured on an "as required" basis. Which simply means it is not authorized for stockage in the prescribed load, but can be requisitioned as needed for immediate use.

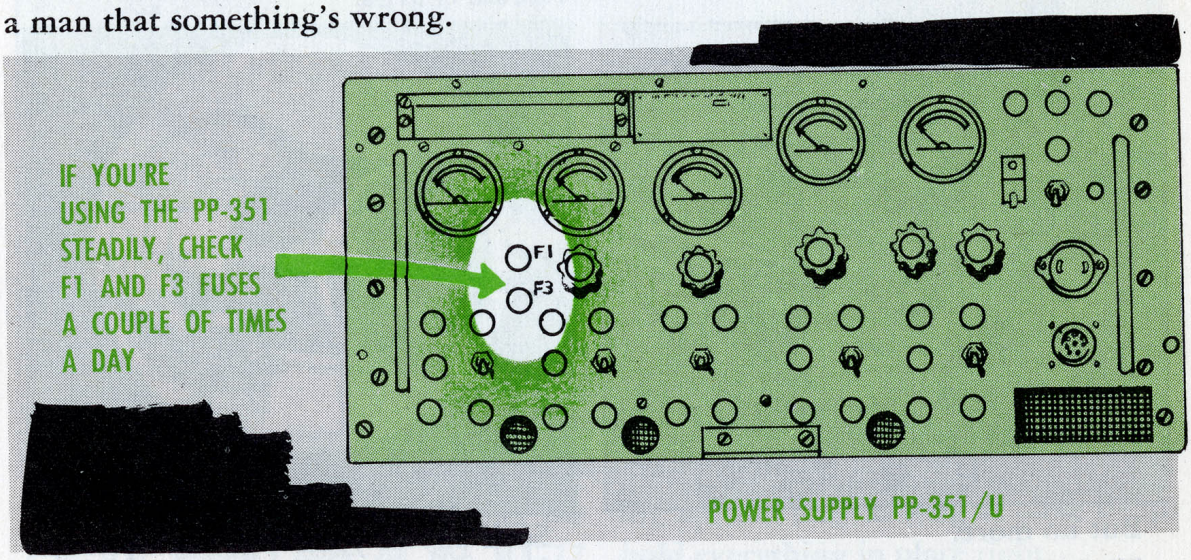
So, if the lock on your box is slipping, and you want to put a stop to the situation, just make out the requisition . . . dip into the bin for a quarter-inch screw and lock-washer, and make with the simple installation.

Your box will be properly locked, stopped and ready for action.

WHEN THE FUSE BLOWS

THE NEEDLE WILL ROCK

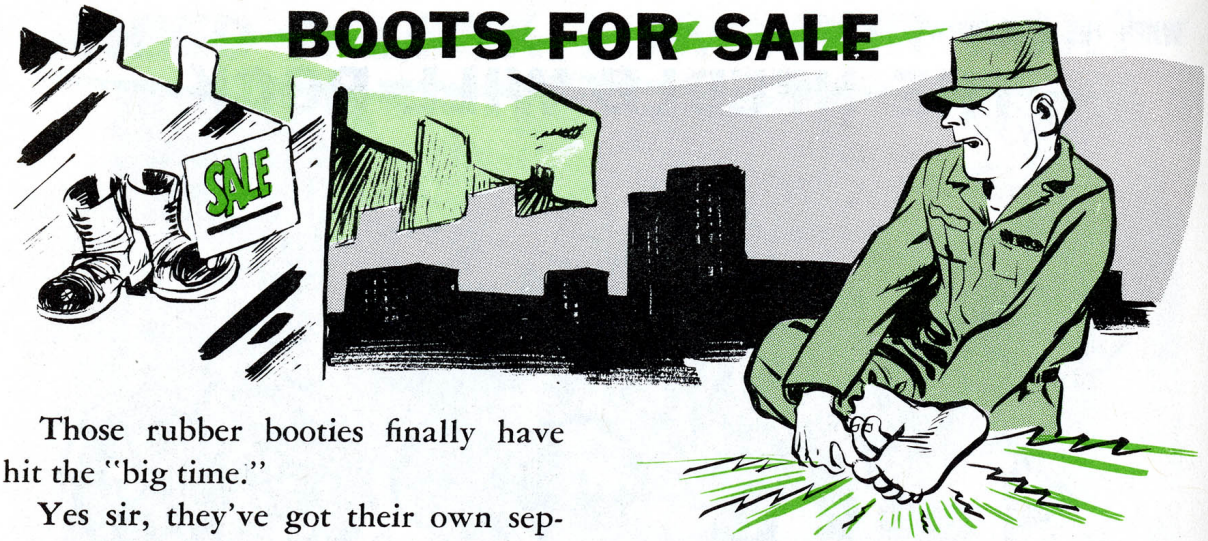
Come to think of it, a fuse earns its bread and butter when it dies—or blows out. 'Cause when that happens, the meters and dials and needles on the dials stop moving. They fall back to zero as the flow of juice is interrupted—thereby telling a man that something's wrong.



But your Power Supply PP-351/U has two fuses that die without tellin' anybody. Seems that the failure of fuses F1 and F3 will **not** have any effect on the reading of the output voltmeter. This is possible because the unit still will have half-wave rectification and so the needle will keep reading after either or both of those fuses blow. All of which means a repairman will get false readings whenever he goes to check whatever radios he's checking (PRC-8's, etc.).

So look at those F1 and F3 fuses daily, and maybe a couple of times a day, depending on how steadily you're using the PP-351.

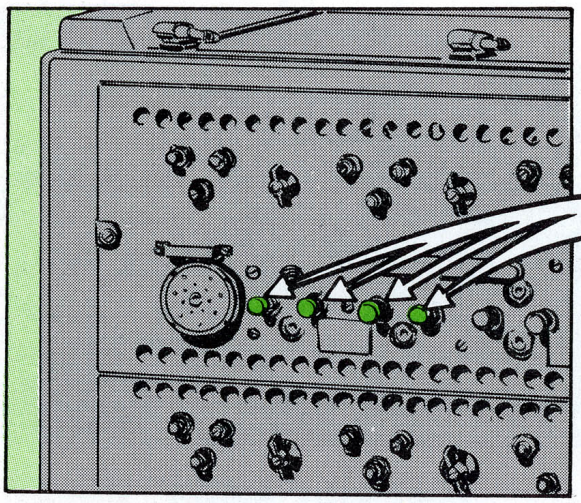
BOOTS FOR SALE



Those rubber booties finally have hit the "big time."

Yes sir, they've got their own separate billing.

For lo these many years, the rubber boots—or caps—on the binding posts in your AN/TCC-4 and AN/TCC-20 have been doing a "double" with the posts. Where one went—the other went. When you needed a new rubber cap, you had to take a new post, too.



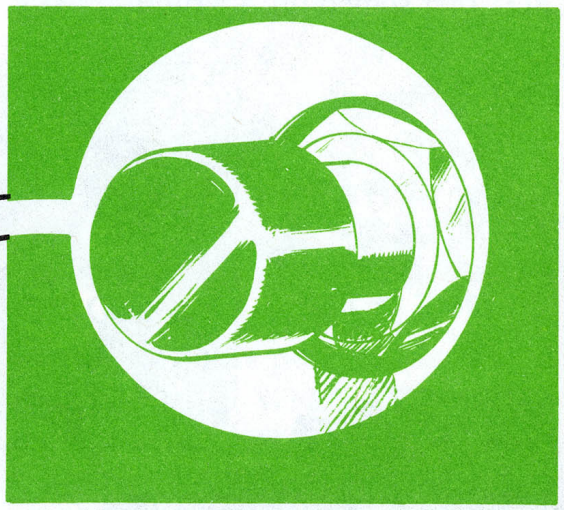
But no more.

Those booties are now doing a solo act. You can book them into your unit just by asking for:

> CAP, Electrical, Rubber, for binding posts, FSN 5940-254-2243 (as listed in TM 11-5805-250-20P, 21 Aug 59).

They fit over the binding posts on the Telegraph Modems 14, 16 and 17 of Channel Units A and B.

Without 'em, of course, you get jolted hard when you slip a connecting wire in place and the equipment either isn't completely grounded or still holds a residual charge.



So if any of your caps are ripped or worn and not insulating like they should, don't run the risk of getting shocked whenever you come in contact with a binding post.

Now new caps are available by themselves, without anybody having to throw away otherwise OK binding posts.

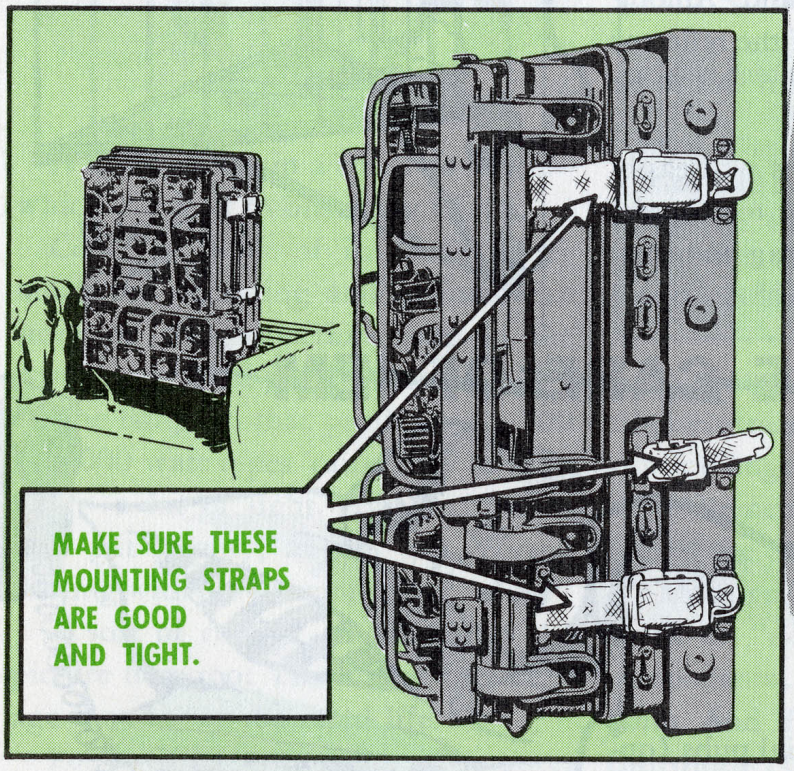
STRAP SLIPPING?

Sometimes a slipping strap can lead to lively developments.

Depends on what the strap is holding!

But one thing's for sure—the straps on your vehicle-mounted AN/GRC-9 Radio Set want to be tight.

Any other way and everything will start slipping, especially the RT-77 Receiver-Transmitter. And it's hard to imagine anything rougher on commo equipment than bouncing cross-country on a Jeep or ¾-ton when there's no time to miss the bumps.



If the mounting straps on either the CW-109 Panel Cover or the RT-77 aren't buckled securely to the straps on the MT-350 Mounting, the cover and the receiver-transmitter will shake around in the mounting enough to damage the components inside the RT-77.

If everything is good and tight, the shock-mounted characteristics of the equipment will keep things from busting up. But only as long as those straps hold everything in place tight.

Whenever your unit is ready to roll —or is already on the roll—be sure the RT-77 and CW-109 are strapped in tight. And check those straps during operations, too. After all, they're only straps—and can work loose a little.

Keep 'em tight all the way all the time. Tight.

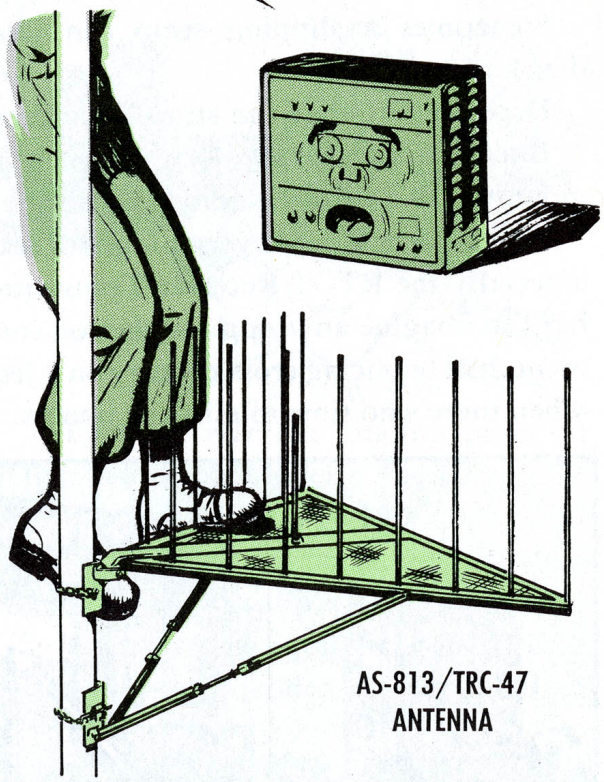
NO STEP, PLEASE

They look like little platforms and they're high enough up in the air to be platforms.

But that's where the resemblance ends on those AS-813/TRC-47 antennas. Yet some lads have been treatin' them just that way by climbing out on them—with damaging results.

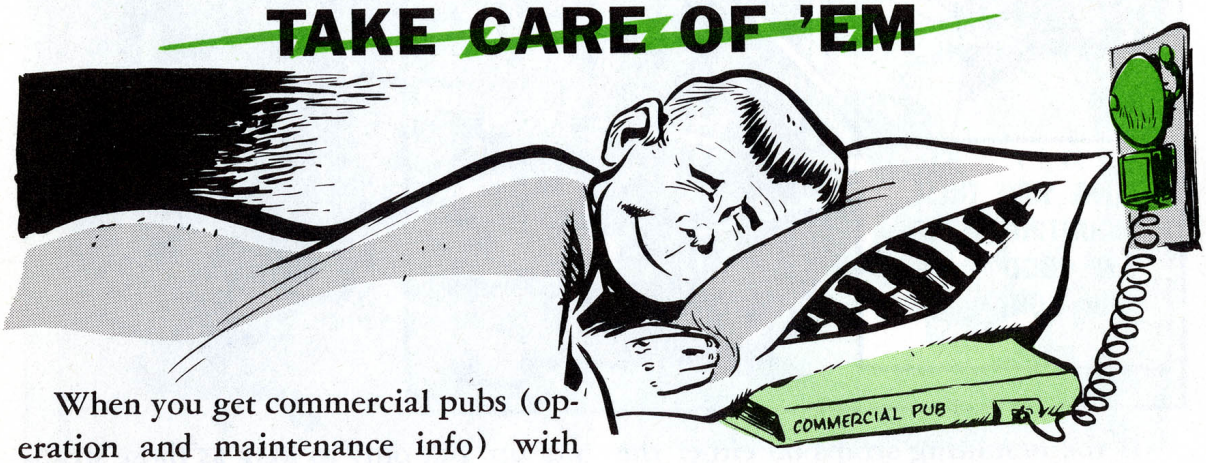
So look at it this way: Those antennas are built like that with various kinds of electronic factors in mind. Among them is the arrangement of the reflector rods, which need a platform so's to be lined up the way they are.

The clamps and supports will easily keep the antenna tied tight to its pole, but the whole works will sag and snap if somebody sets foot on it.



AS-813/TRC-47
ANTENNA

TAKE CARE OF 'EM



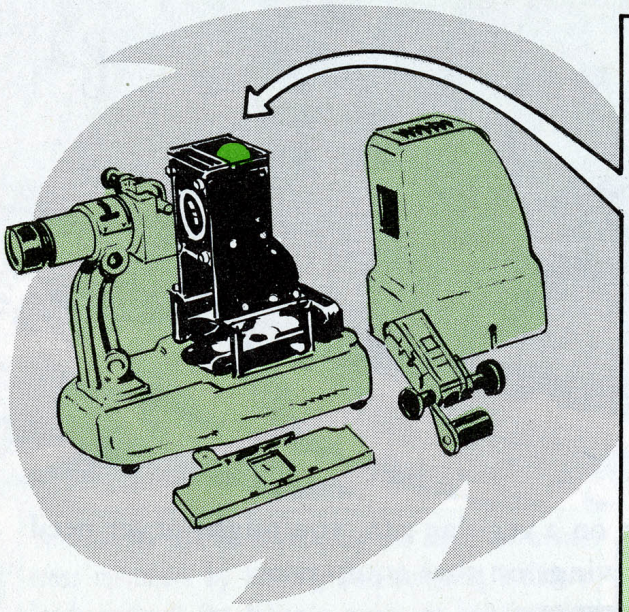
When you get commercial pubs (operation and maintenance info) with your Signal Corps equipment . . . take care of 'em. They're not so easy to replace.

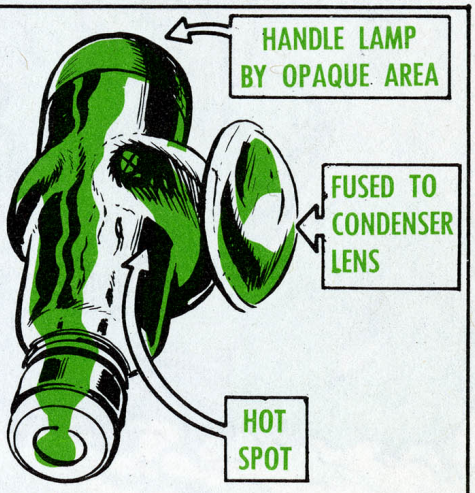
Usually your TM-11 is written and issued along with your equipment. But there are times when the manufacturer's pub is the only info available. So if you're missing your manufacturer's operation and maintenance info, first thing you do is look in your DA Pamphlet 310-4 to see if a TM has been published.

If a TM hasn't been published, then you'll have to get another commercial pub . . . you can only get it by direct request to the manufacturer, if available.

Once you get your commercial pub, better hang on to it.

BLISTERING EFFECT





Always handle the lamp by the black opaque surface at the top—or by the base. This is where a finger or two in the wrong place will surely lead to blistering effects. The oil in a fingerprint on the envelope will attract heat as soon as the lamp is turned on. That will quickly build up a hot spot. And so on.

A hot package in a small envelope—which can lead to blistering effects.

Come to think of it, that's pretty much the operating and maintenance story on the projection lamp in the Army's standard projectors.

The lamps in that projector are 500 to 1,000 watt types 'cause they have to throw a lot of light. And this means they get mighty, mighty hot. Forced cooling with blower motors is a "must."

A sort of rule-of-thumb enters the picture here too: The higher the wattage the shorter the rated life.

For a 1,000 watt lamp, f'rinstance, the rated life is 10 operating hours. As the lamp is used, it will begin to darken and grow black. And as it darkens, the envelope will gradually absorb heat. Moreover, if the lamp is kept in the projector too long, blisters will start to form.

Worse still, this blistering could lead to a damaged condenser lens as the lamp expands and actually fuses with the lens.

So watch that lamp for even the slightest trace of darkness—and anytime you lay fingers on it be sure to wipe it clean. Remember, you can easily seal the fate of the envelope with a fingerprint.

DA Form 11-256 calls for a daily check on "external surfaces of optical components . . ." which includes the lamp. And if not a daily check, then a thorough cleaning before each use. Clear water and a lint-free cloth will do the job nicely.

When you shut off a projector that has separate switches for lamp and motor, shut off the lamp first and then let the blower motor run for a few more minutes. Otherwise, the temperature in the lamp will rise before it goes down—which could cause cracking of the condensing lens.

Operating a 5-ton M51 dump truck on a regular run, you might never need to know why there's a pair of tailgate wings on that equipment.

If everything you haul happens to be small enough for:

1. Dumping under the tailgate or...

2. Spreading under the shackle gate or...

3. Dumping over the dropped tailgate.

you can practically forget about those tailgate wings.

FOR OVERSIZE M-51 LOADS

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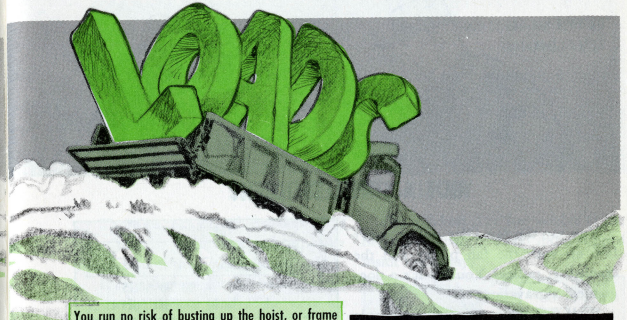
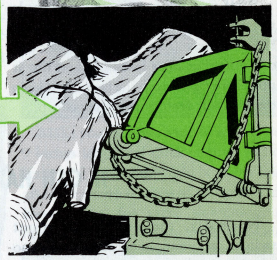


You run no risk of busting up the hoist, or frame cross members by hauling and dumping ordinary loads without the tailgate wings or hoisting the body no higher than seven feet.
But your M51 tailgate wings are welcome as money from home when you do need them—and here's why.



Suppose you have to haul an **outsize load** of bulky stuff like tree trunks, long timbers, or big boulders.

Without some sort of cradle, or rocker-type pocket at the tail end of your M51 dump body—just how would you keep such a load from shifting and rolling with every bump in the road?

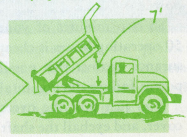
So you simply unhook your tailgate wings, mate them with the let-down tailgate, and you've got that outsize bulky load cornered right where you can control it.

Of course—even with this rocker-type pocket to help hold your load—you can't tear off like a rabbit, disregarding the extra burden bearing down on that extended tailgate.

So-o-o-o you soft-pedal all the way, playing everything cool—including dumping that bulky load. To save strain on both tailgate and hoist, you put POWER UP just high enough to land the load on the ground . . . never any higher than seven feet.

Remember, before going back to your regular run, to button those tailgate wings safely back alongside the dump body until you need them for another outsize load.

And keep your TM 9-8028 handy, cause it has a lot more info on this dumping business.



LOADS

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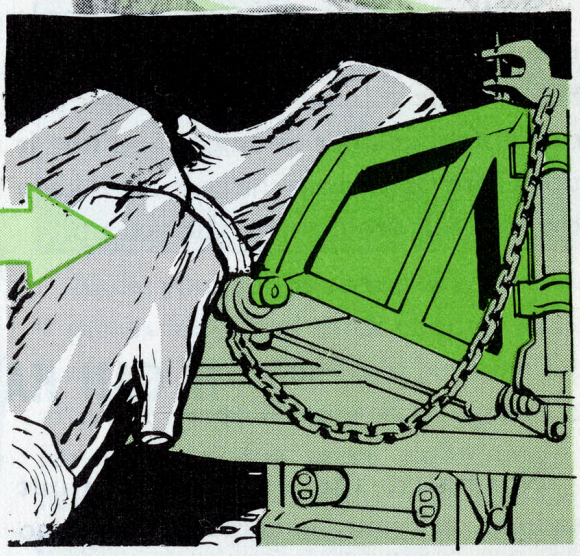

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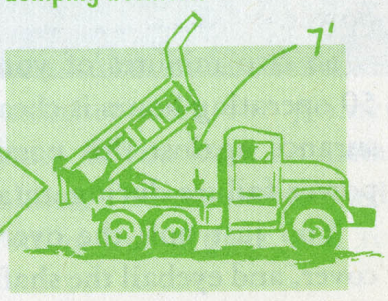
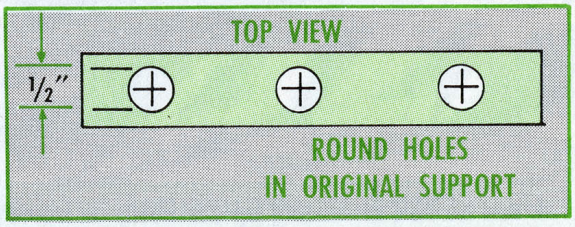
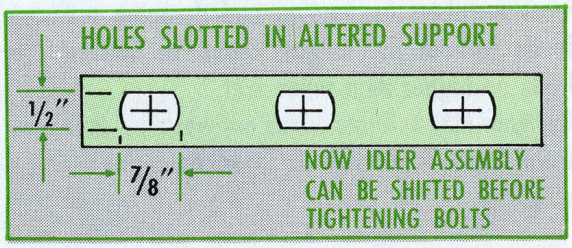


GOT A SHIFTLESS IDLER?

You say the fan idler pulley won't line up with the fan pulley and the crankshaft pulley? You say it's a dog-gonned aggravation?

Well, get your maintenance people to pull that idler unit and slot the three holes in the support bracket. Then you can shift that idler assembly and line it up before tightening the bolts. It'll keep the fan belt from being chewed up.





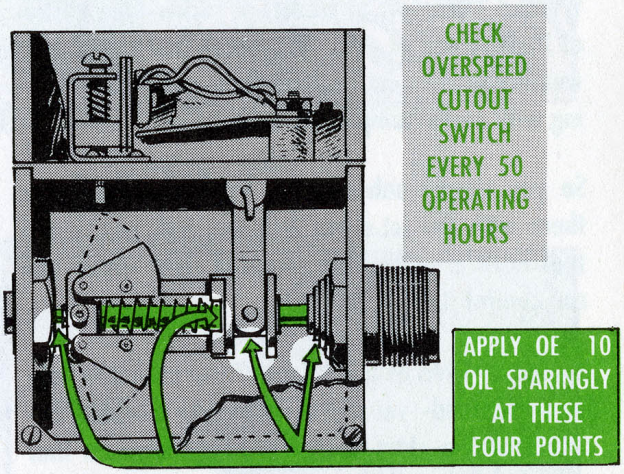
IT CAN HAPPEN HERE

Normally, the overspeed cutout switch on your generator needs no scheduled lubrication.

But what's normal for one switch could bug up another. And when the overspeed cutout gets stuck, it can deadline both the generator and all the missile fire control complex that must depend on the generator's precise power.

So two minutes of your time every 50 operating hours is cheap enough insurance against this possible cause of power failure during an alert.

You just pull the overspeed switch cover, and eyeball the shaft for dryness.



If it needs lubing, apply OE 10 oil **sparingly** at all four points.

Then put back the switch cover and schedule your next look-see at this switch. Every 50 operating hours should do it.

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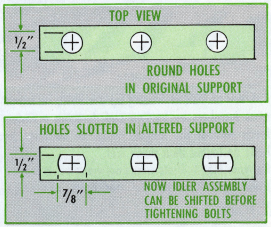

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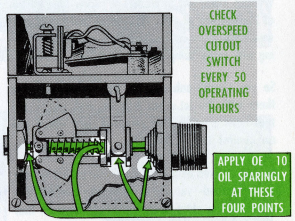

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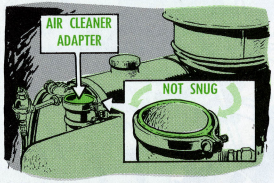
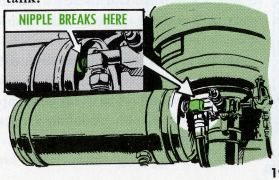
SHIM OUT THAT SHIMMY

There's a tricky trouble-maker that's easy to miss while making your daily inspection of those generators.

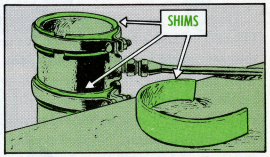
It's a shimmy in the hand primer bracket that sits under the rear air cleaner. It happens because Sam made the arms so long on some of those brackets, you can't screw 'em up snug around the air cleaner adapter.



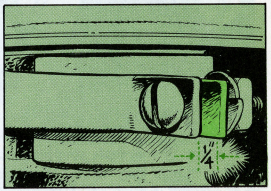
So those brackets shimmy and shake the whole hand primer line. Next thing you know, vibration snaps off the nipple connecting the primer line with the day tank.



The quickest cure for wobble at the bracket is a pair of metal shims slipped inside the clamps.



Make your shims about ¾ inch wide, 9 inches long, and thick enough so's to leave a ¼ inch of daylight between lugs after the clamp is screwed up tight. This leaves room for more tightening, if needed, after operating your Hol-Gar.



There's another cure for primer bracket shimmy, if you have no metal suitable for shims. You can shorten each clamp by cutting out a piece and re-welding.

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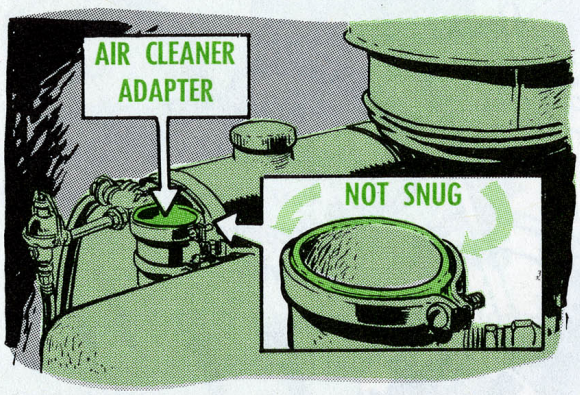

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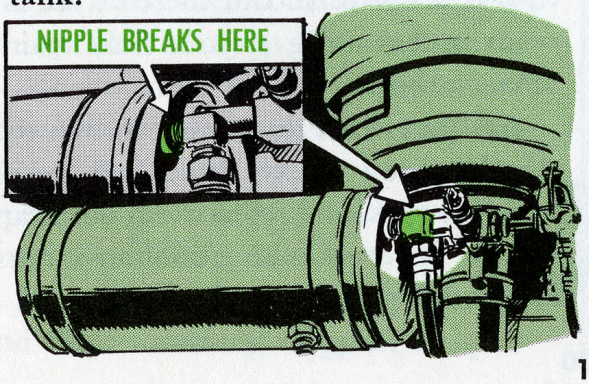

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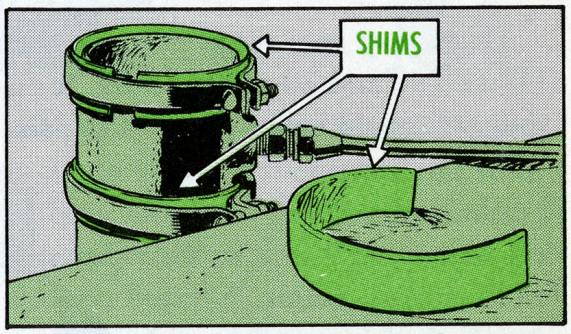
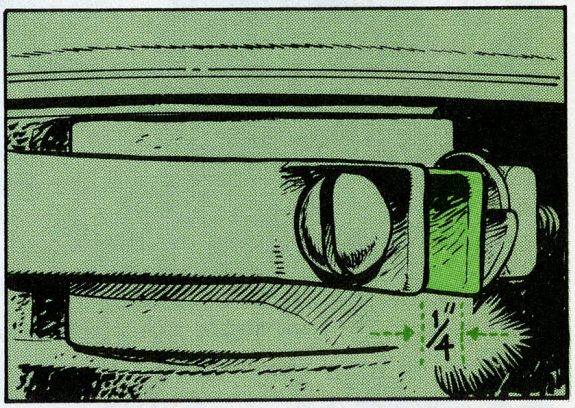
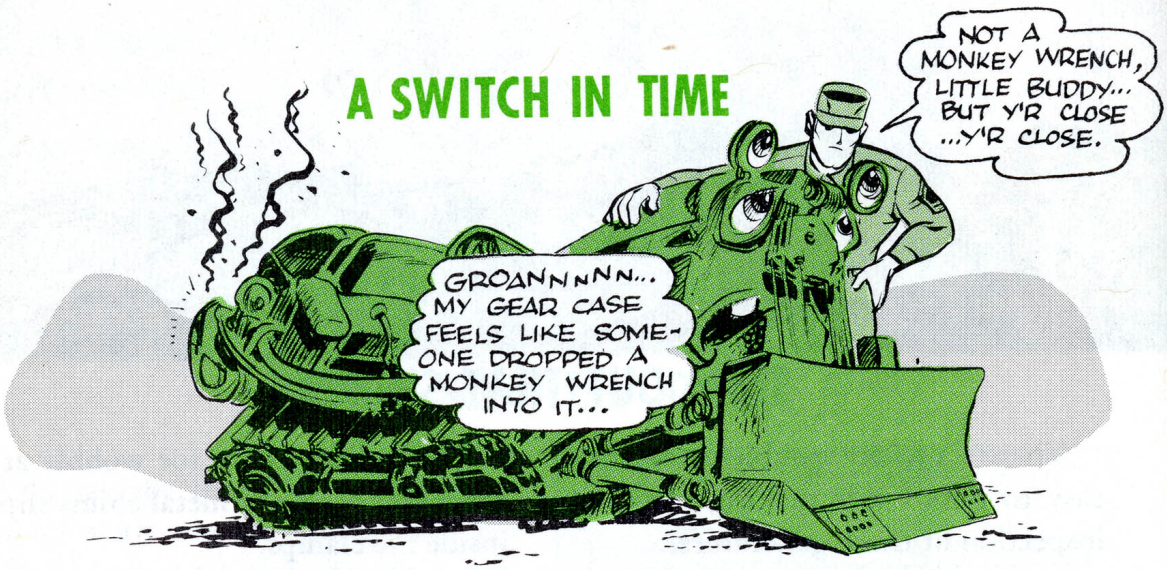


Make your shims about ¾ inch wide, 9 inches long, and thick enough so's to leave a ¼ inch of daylight between lugs after the clamp is screwed up tight. This leaves room for more tightening, if needed, after operating your Hol-Gar.

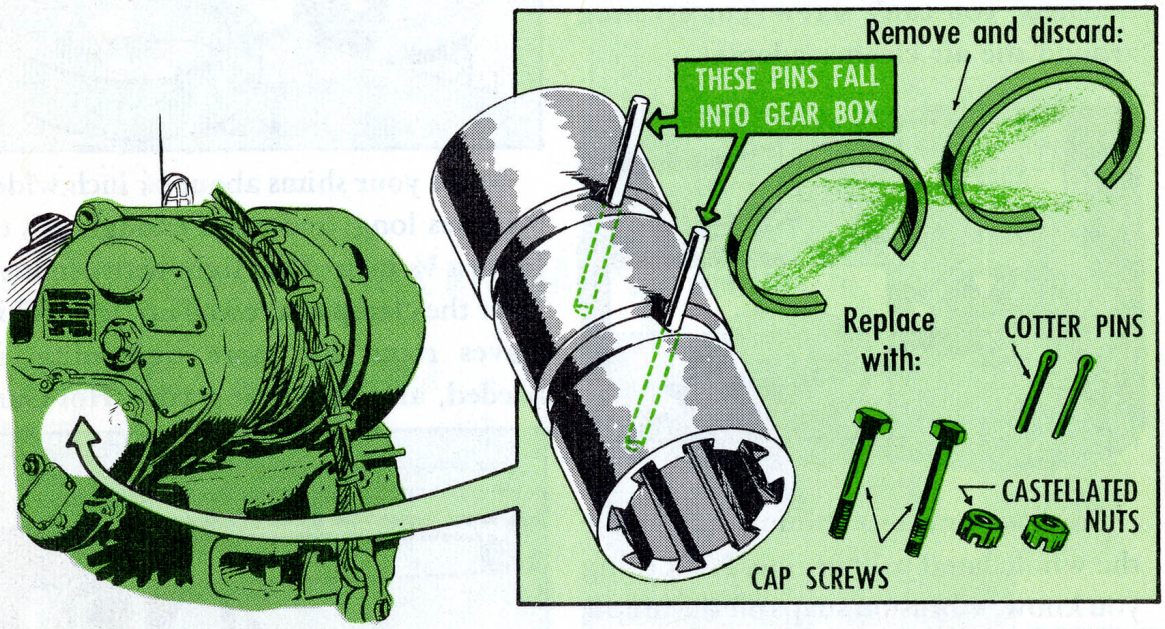


There's another cure for primer bracket shimmy, if you have no metal suitable for shims. You can shorten each clamp by cutting out a piece and re-welding.

A SWITCH IN TIME



There may be a weak point in the CARCO winch that rides the tail of your TD 18-182 and 20-200 tractors. It's a small thing by itself, but it could deadline your whole rig and run up a king-size repair bill.



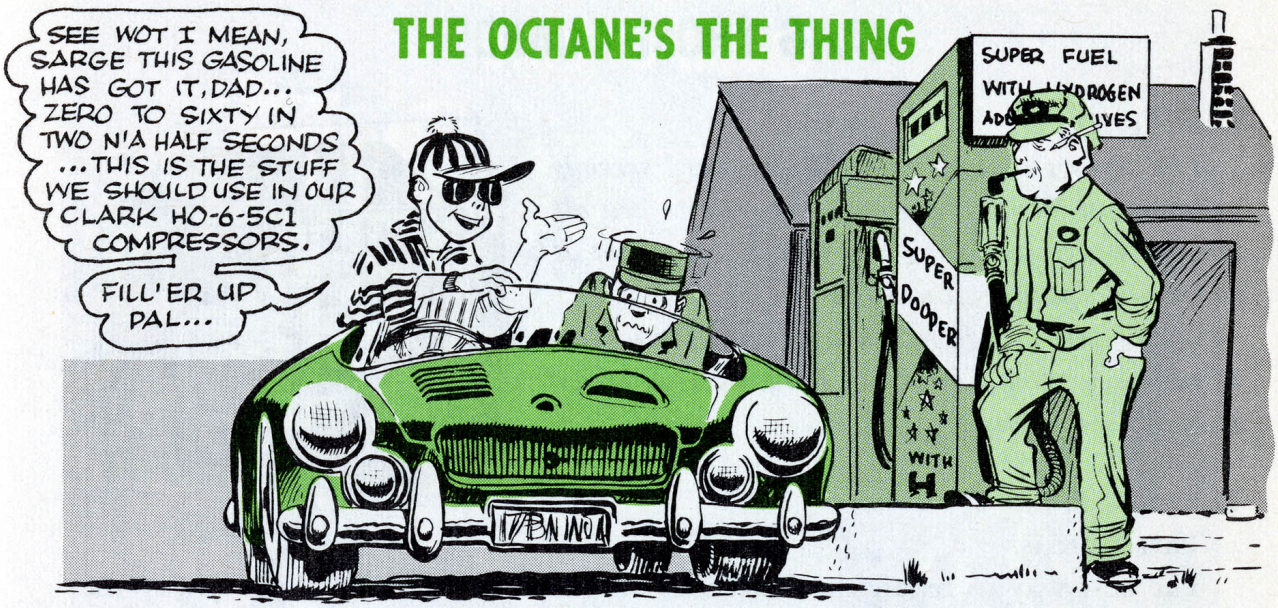
Here's what happens on the winch. The two lock rings that hold the link pins in the pinion shaft coupling are unhappy where they work. The lock rings goof off, the link pins fall out and drop into your tractor's gear case.

Zingo—your whole rear end is in a sling because two bits worth of lock rings slept on post.

Get 'em to make this switch in time to save a deadline. But there's a fix all ready and waiting at your field maintenance shop.

All they have to do is remove the winch, throw away those lock rings and link pins, and replace 'em with cap screws fastened with castellated nuts and cotter pins.

THE OCTANE'S THE THING



To develop the rated capacity of 80 CFM at 5000 PSI, the engine that powers the Clark HO-6-5C1 compressor requires gasoline with an octane rating of 80 or higher.

Which means the fuel you use must meet either Federal Spec MIL-G-3056, or VV-G-76. (These Specs with a letter after them are OK, too.)

SM 10-1-C4-1 (with Change 2) gives you a rundown on fuel specs and stock numbers. Don't let that funny-looking SM number throw you. That means it's a Federal Supply Catalog, listing items for all the Armed Forces. It's the latest word on FSC Group 91 items—fuels, lubricants, oils, and waxes.

PLUG THE HOLE

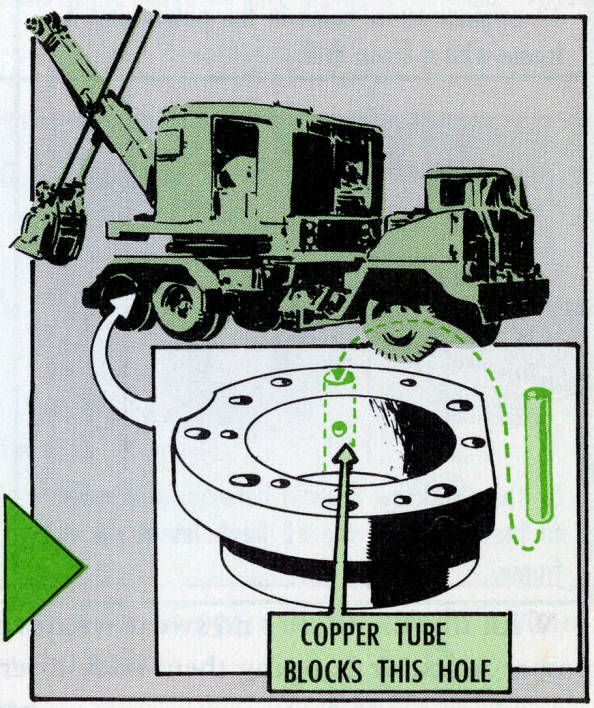
Next time your support unit is doing some work on your Garwood M20B crane-shovel, have them plug up the oil hole in the pinion-bearing-housing on the rear-rear axle of the carrier.

This'll keep oil from draining back into the differential housing before it reaches the outer cone and will keep your pinion bearings from failing.

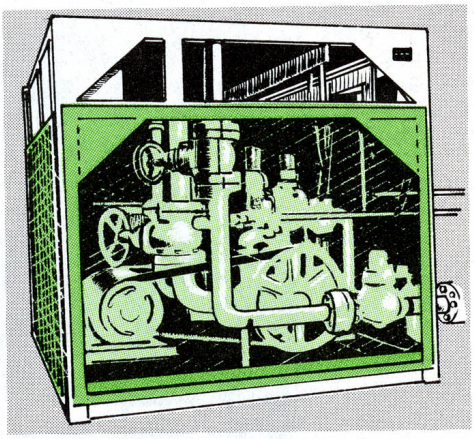
All you need is 2⅝ inches of .375 OD annealed, seamless copper tubing—FSN 4710-277-5527.

The oil hole is plugged by pressing the copper tubing in, like so.

Be sure the tubing has clear passage and there's nothing clogging it up.



HANG THOSE GUARDS!



Dear Sgt Dozer,

The screws that hold the three guard screens around our Nike elevator power units are all chewed up from taking the guards off to get at the unit to pull maintenance.

We've already gone through a couple of sets of capscrews that I know of. Isn't there an easier way of doing things?

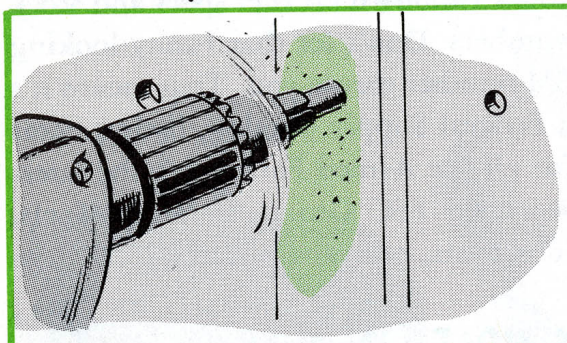
SFC F. P.

Dear SFC F. P.,

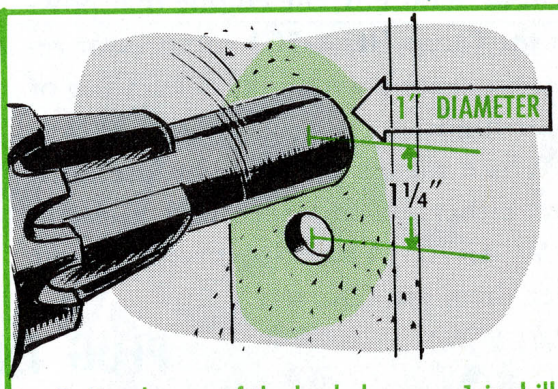
There sure is.

The best way to repair the fastenings on those guards is to throw away the original capscrews and replace 'em with a slot-and-stud hookup.

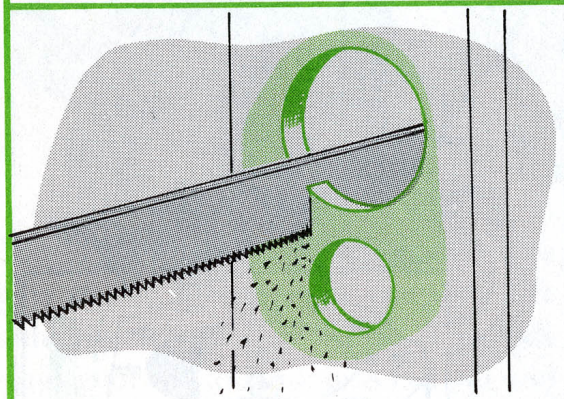
Here's all you have to do—



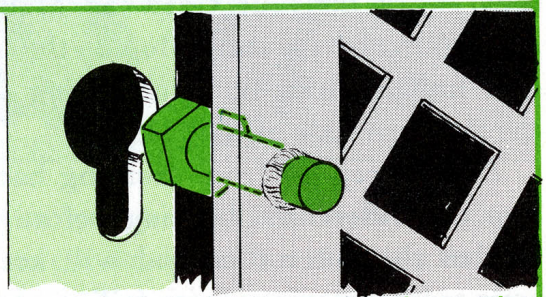
1. To start the keyhole, enlarge each of the 12 original screw holes in the power unit A frame with a 9/16-in drill.



2. For the eye of the keyhole, use a 1-in drill centered 1¼ inches above the 9/16-in hole.



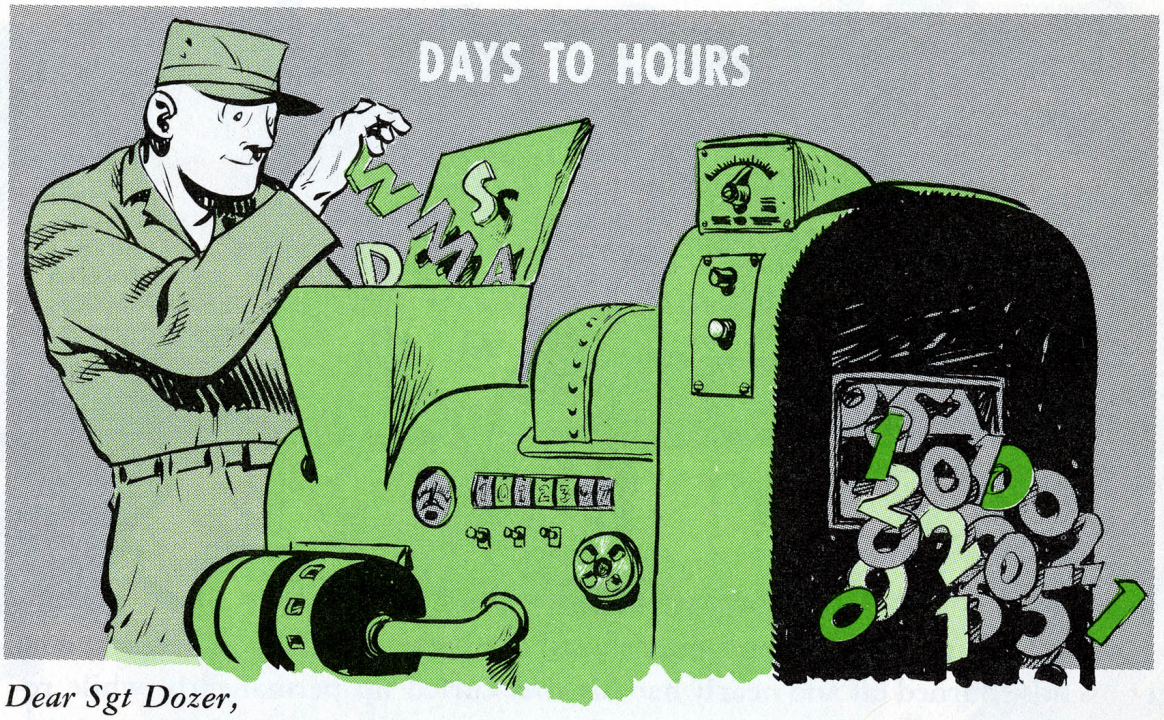
3. Then hacksaw the slot between drill holes to finish each of the 12 keyholes in the A frame.



4. Now remove all four capscrews from each guard frame, and replace 'em with ½-in x 1½-in hex-head bolts. Push each hex head out just enough to hook inside its matching keyhole in the A frame, and weld the bolt to the guard frame in this position.

With this fix, there's no sweat whatever in lifting those guard screens off your power units, or hanging them back after you pull maintenance.

Sgt Dozer



Dear Sgt Dozer,

This L and Q service business for Engineer equipment is working out fine in our outfit. However, while the new LO's tell us what lube points to hit according to hours of operation, the old LO's have the D, W, M, SA and A symbols.

Now, in order to standardize our operations, on what basis can we convert the symbols to hours?

CWO Y. S.

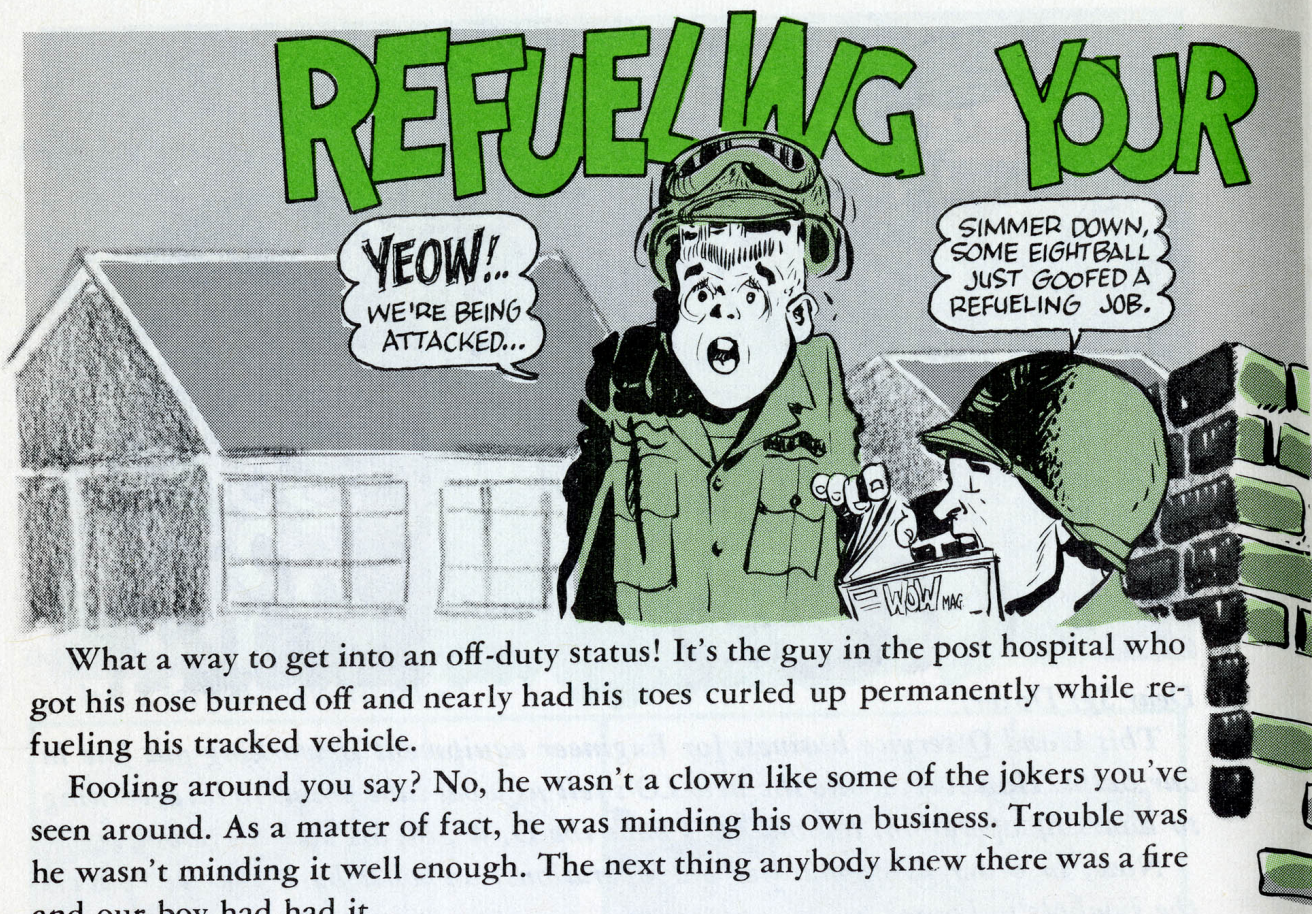
Dear CWO Y. S.,

Good question. No matter what the calendar says, the more hours a piece of equipment runs, the more lube it needs. So let's start at the small end and work up to the round numbers.

OLD LO SYMBOLS	OPERATING HOURS
½ Day	5
D	10
½ Week	25
W	50
2-W	100
M	250
2M & Q	500
S	1000
A	2000

As you can see, equipment that racks up a lot of operating hours in a short time will also get a lot of lubrication in a short time.

Sgt Dozer



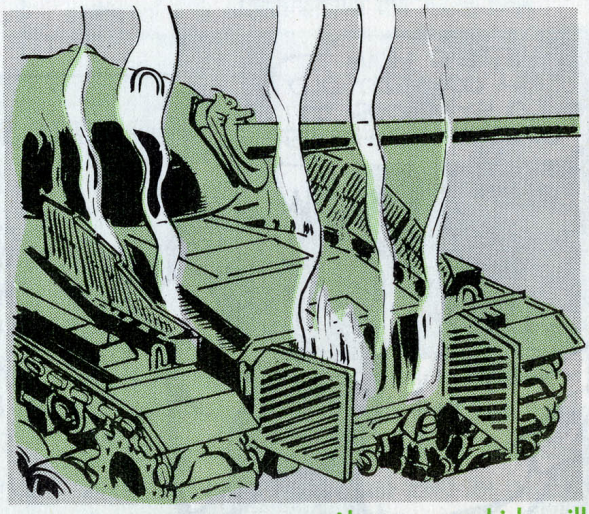
What a way to get into an off-duty status! It's the guy in the post hospital who got his nose burned off and nearly had his toes curled up permanently while refueling his tracked vehicle.

Fooling around you say? No, he wasn't a clown like some of the jokers you've seen around. As a matter of fact, he was minding his own business. Trouble was he wasn't minding it well enough. The next thing anybody knew there was a fire and our boy had had it.

We don't know the exact cause yet 'cause he can't talk with the bandages over his mouth. If you don't want to wind up the same way, it might be a good idea to follow these rules:

1. Before refueling . . . always let the engine get cooled off—long enough to let the heat lose itself in the air. This is because a hot engine raises the temperature of the metal close by, which in turn ups the temperature of the surrounding air.

This combination causes a lot of gas vapors which tend to stick around the hot vehicle. If there's an accidental spark or flame . . . you're liable to be blown into the next county. The danger from this is greatest in hot humid, windless country.



You can lessen the chance of fire in this case by stopping your vehicle somewhere near the refueling point. Then do some other maintenance work for about 10 minutes before driving over to gas up. Also, your vehicle will hurry up and cool off faster if you raise the grille doors during this waiting period.

REFUELING YOUR TRACKED VEHICLE

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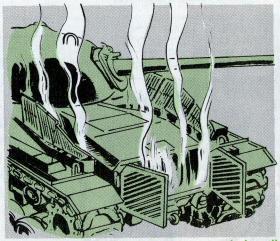

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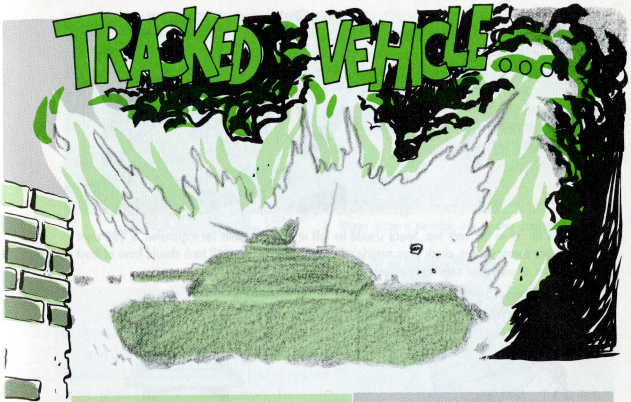
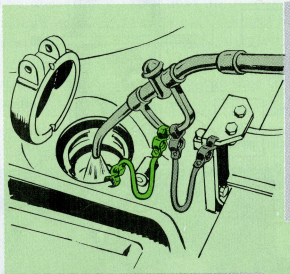
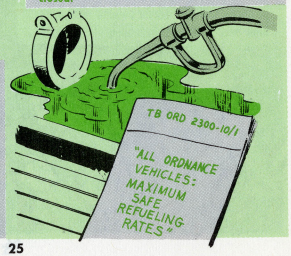


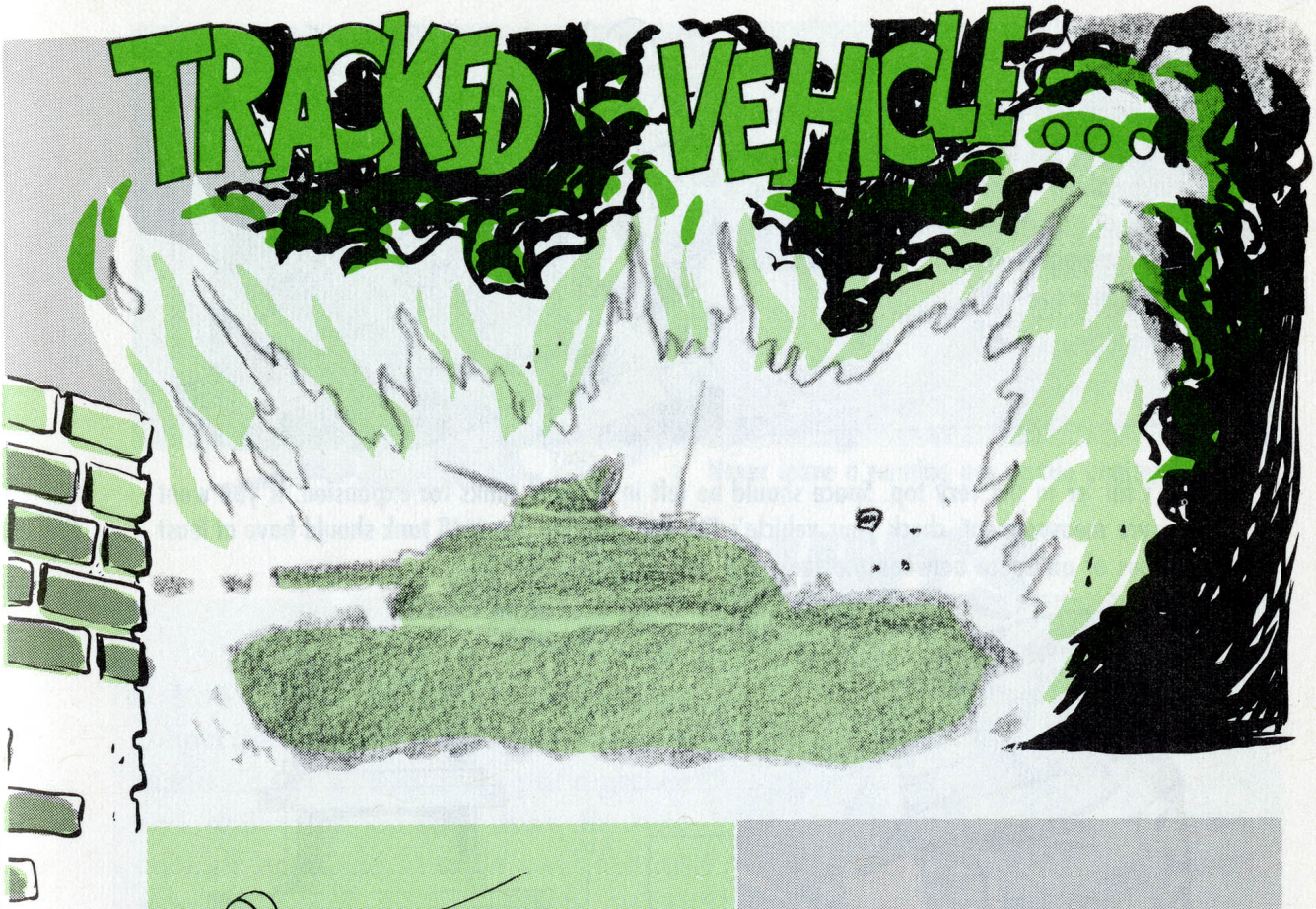


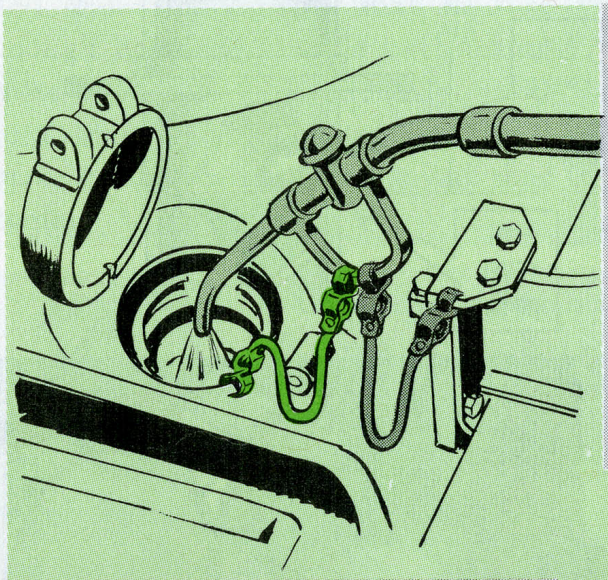
2. To ground out any static electricity the nozzle or filling device should always be in contact with the filler neck during a fueling operation. If possible, always use hoses made of material that'll conduct this static electricity. As an extra careful step, you might try grounding wires to both the filler neck and the vehicle. Leave the grounding wires attached until the gas caps have been tightly closed.



3. Your rate of filling should never go more than the rate of flow for your vehicle—'cause this will cause spillage. And when gas spills on a warm surface a lot of fumes are given off. That ups the chance for a heap big blaze. To check the refueling rate for your vehicle, look up TB ORD 2300-10/1 "All Ordnance Vehicles: Maximum Safe Refueling Rates."

TRACKED VEHICLE...





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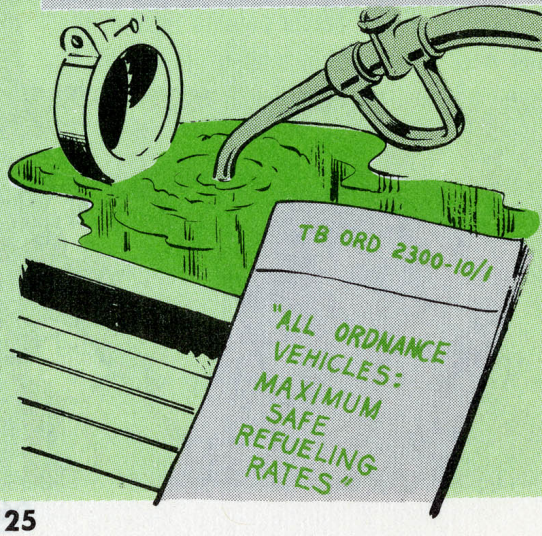
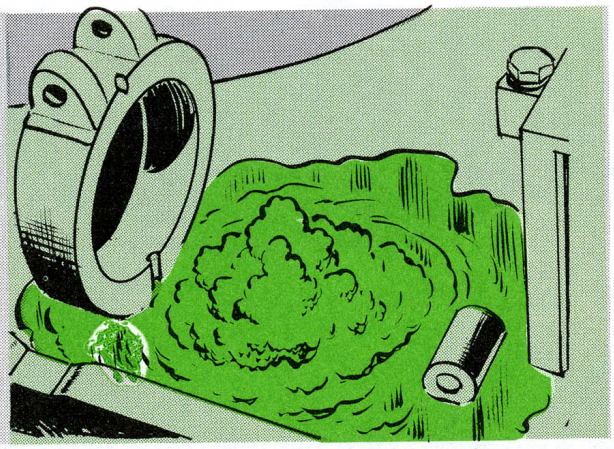
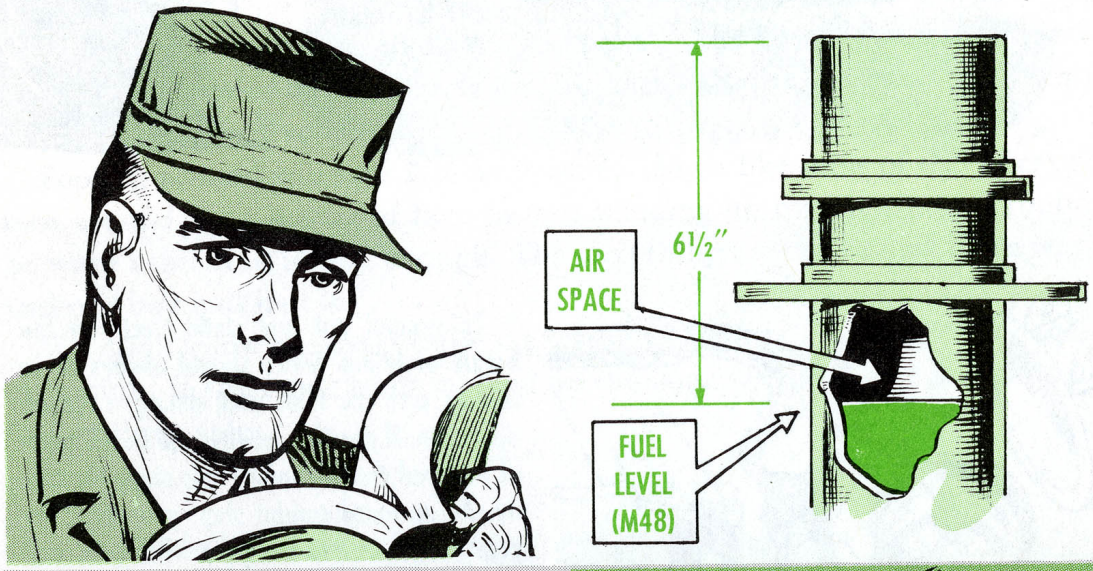


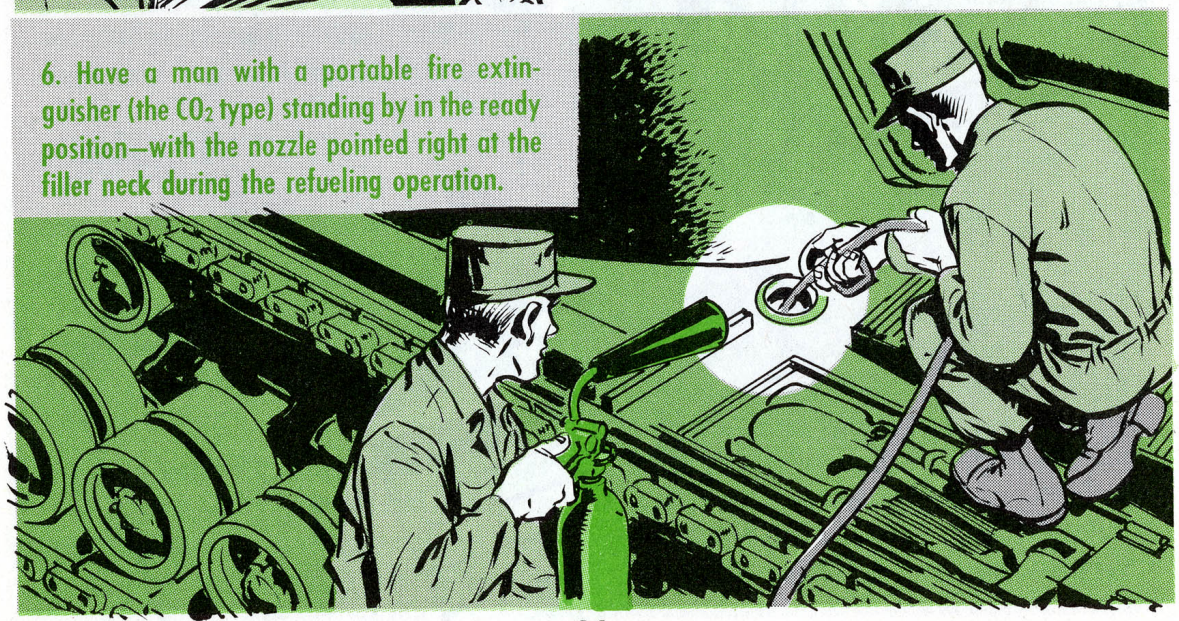
4 When using fast-rate refueling equipment, take care not to get a "surge back" from the filler pipes caused by not enough venting for a fast flow of gas. (Safe refueling rates vary with the shape and volume of each fuel hose and filler pipe.)



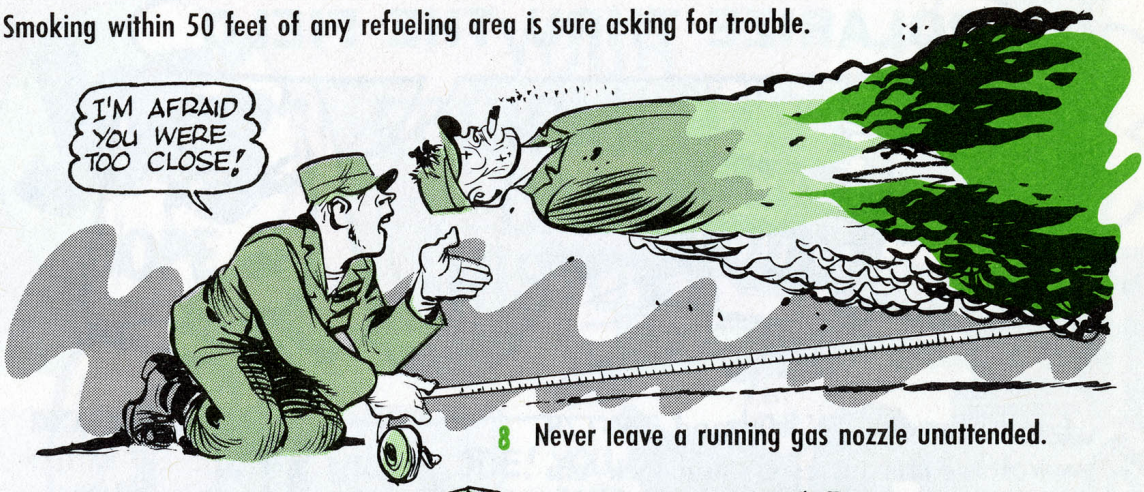
5 Don't fill 'er to the very top. Space should be left in the fuel tanks for expansion. If you want a real sure measurement, check your vehicle's TM. For example, the M48 tank should have at least 6½ inches of air space between the fuel level and filler neck top.



6. Have a man with a portable fire extinguisher (the CO_2 type) standing by in the ready position—with the nozzle pointed right at the filler neck during the refueling operation.

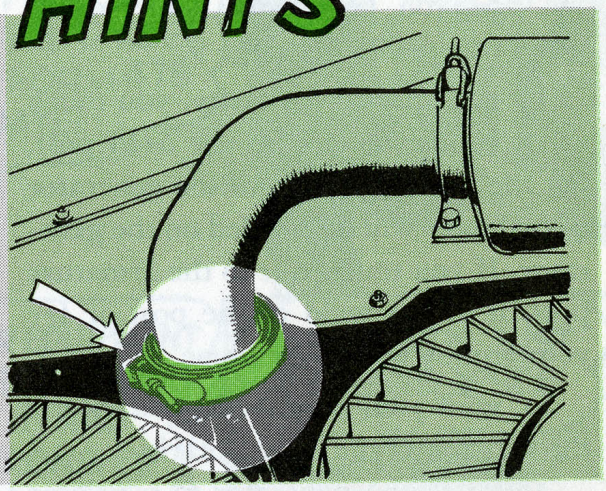


7 Smoking within 50 feet of any refueling area is sure asking for trouble.



8 Never leave a running gas nozzle unattended.

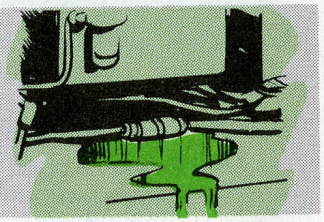
SIDE HINTS

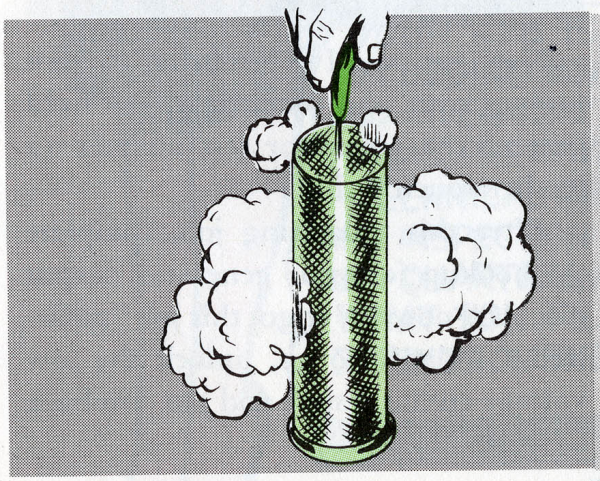


● You want to be sure that the exhaust connections from the engine exhaust manifold to the muffler are put together and sealed right. They may be sure enough hard to assemble but putting these assemblies back carelessly makes for extra heat in the armor plate. This'll make cooling harder when gas-up time comes.

● Change your clothes as soon as possible if you get splashed with gas.

● Watch for gas leaks . . . report 'em pronto.

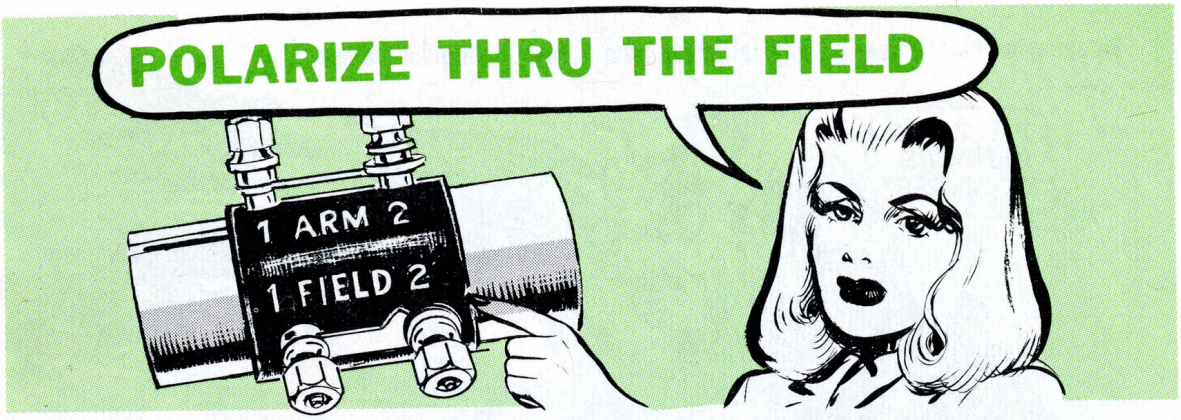




● Make sure the filler cap area is clean . . . that goes for the wiping rag, too.

● The screen unit in your vehicle's filler neck that acts as a filter and a fire arrestor should be taken out and checked every so often. A pressurized air hose is best for cleaning the screen.

● Use good common maintenance sense and other precautions that may be SOP in your unit.

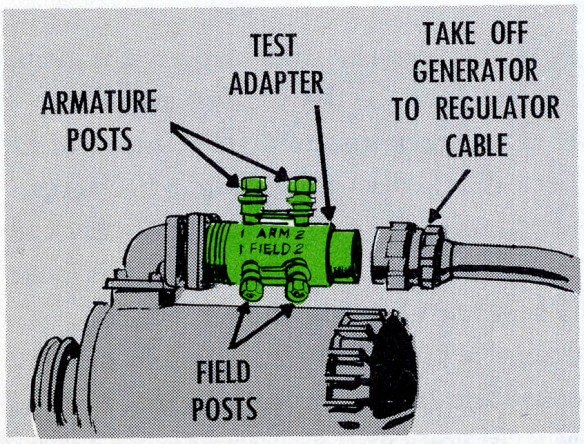


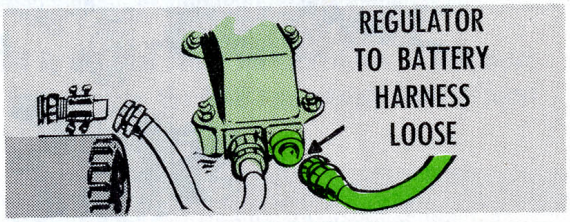
Grab all your TV-100 and TV-128 low voltage circuit testers and lock 'em up. Then take a blue pencil and change the poop on polarizing your vehicle generators in PS 88, page 9.

To get the right polarity, you touch a hot jumper briefly to the **field** post, not the armature post, of the generator test adapter when installed on the generator. If you touched it to the armature post, it might weld to the post or fry your stubby fingers or worse.

So, with your engine stopped, here's the way to get the right polarity:

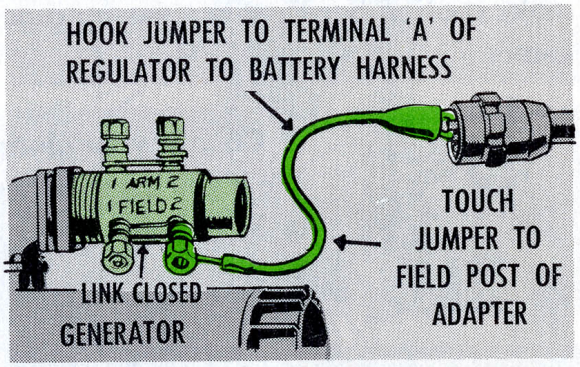
Take off the generator-to-regulator cable and install the test adapter on the generator. It's best to leave the cable disconnected from the adapter. But if you connect it, make sure you leave the adapter links open.





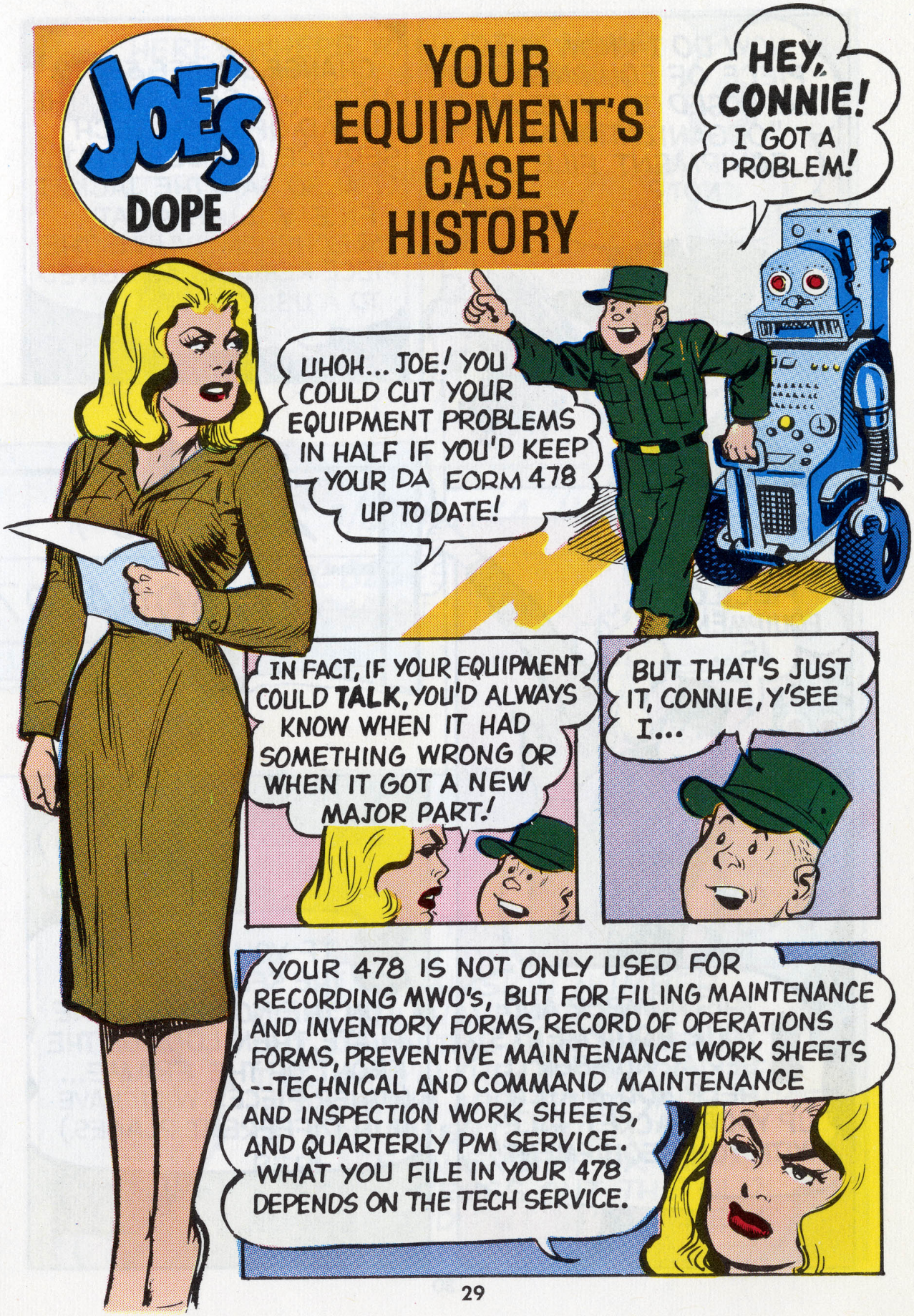
Next, take loose the regulator-to-battery wiring harness at the regulator.

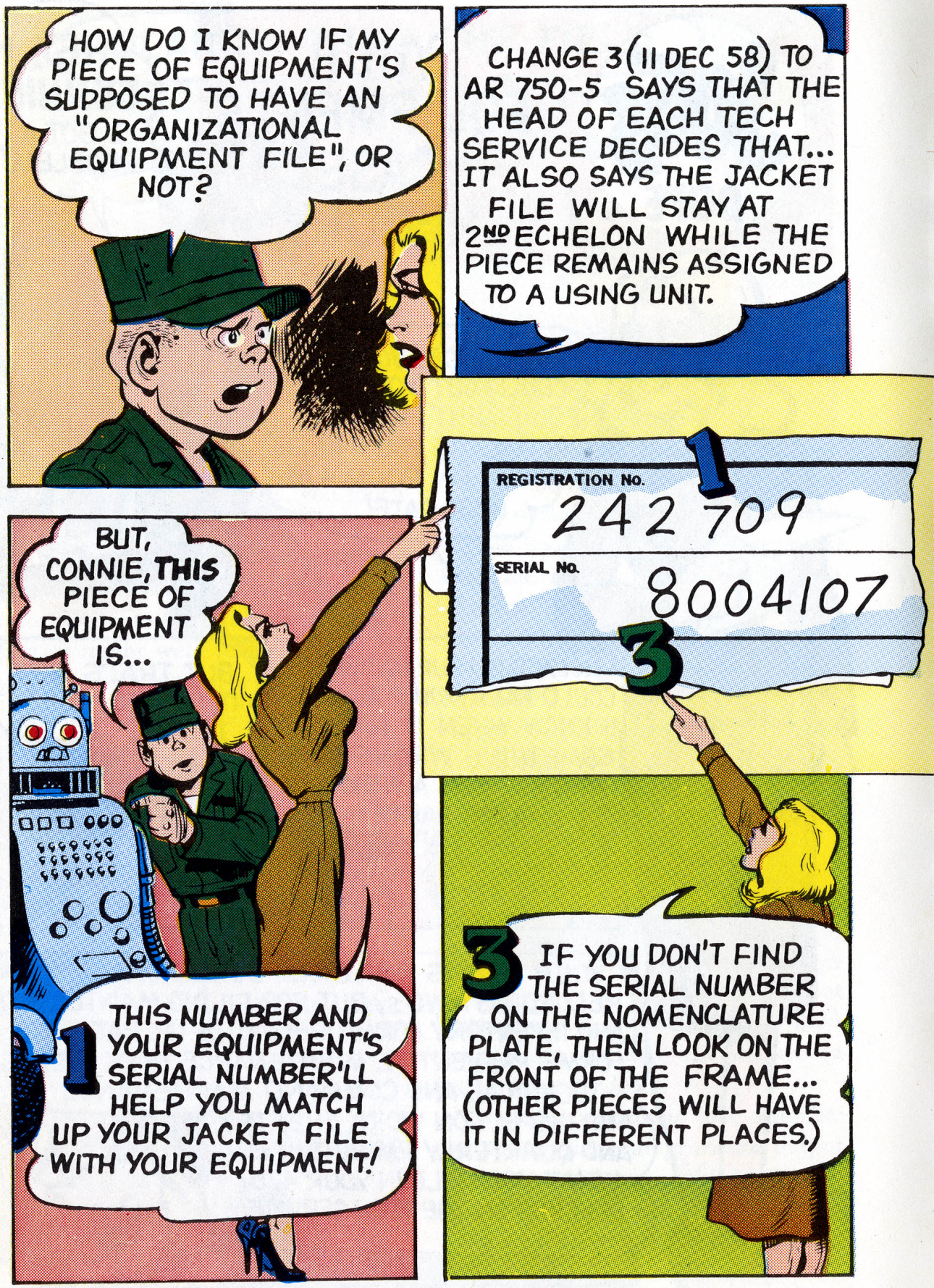
Then hook your jumper to terminal A of the regulator-to-battery wiring harness . . . or, if it's handier, you can make this hookup to the positive post of the battery or the battery-cable post of the starter.

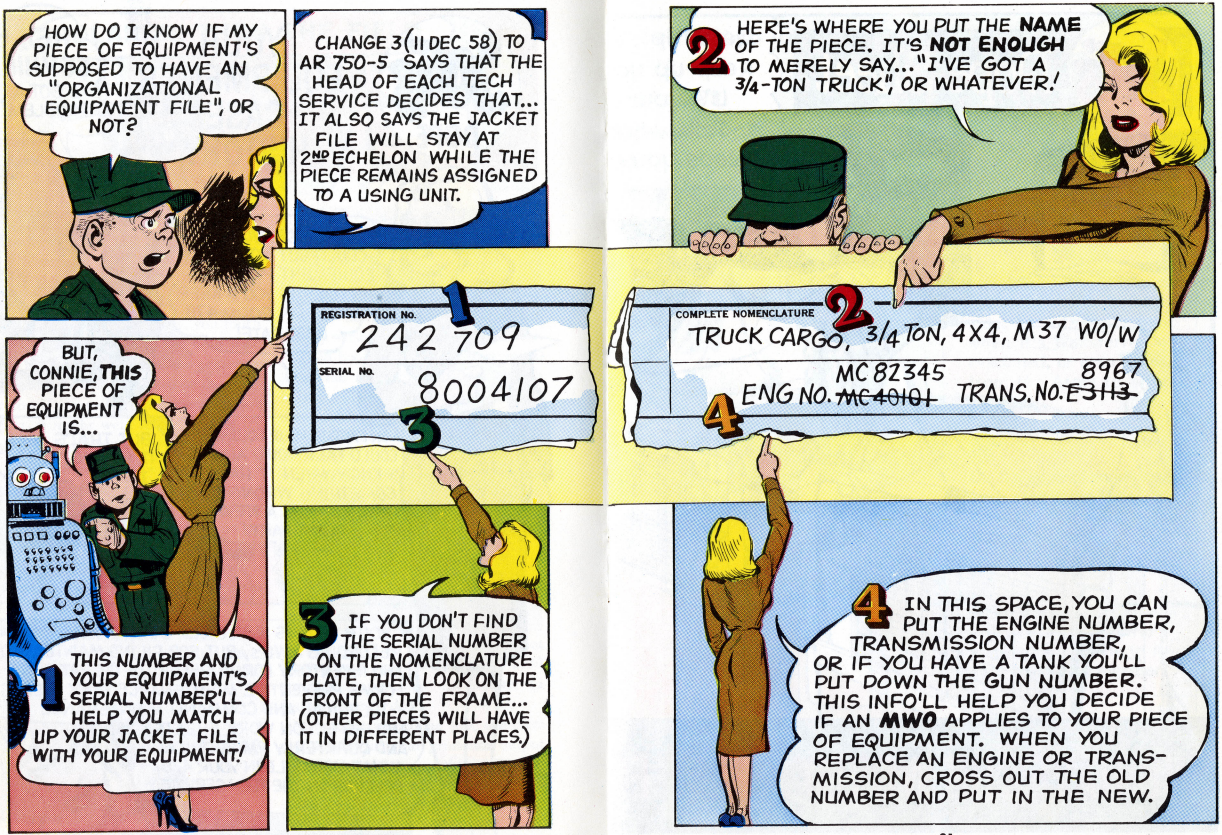


Now you're all set to bring the hot jumper over and touch it to the field post of the generator test adapter (a feather touch'll do).

After this polarizing job, complete the hookup for your generator output test. And now we've got this job "polarized," it's safe to go, unlock the low voltage circuit testers and put 'em back to work.


JOE'S DOPE
YOUR EQUIPMENT'S CASE HISTORY
HEY, CONNIE! I GOT A PROBLEM!
UHOH... JOE! YOU COULD CUT YOUR EQUIPMENT PROBLEMS IN HALF IF YOU'D KEEP YOUR DA FORM 478 UP TO DATE!
IN FACT, IF YOUR EQUIPMENT COULD TALK, YOU'D ALWAYS KNOW WHEN IT HAD SOMETHING WRONG OR WHEN IT GOT A NEW MAJOR PART!
BUT THAT'S JUST IT, CONNIE, Y'SEE I...
YOUR 478 IS NOT ONLY USED FOR RECORDING MWO's, BUT FOR FILING MAINTENANCE AND INVENTORY FORMS, RECORD OF OPERATIONS FORMS, PREVENTIVE MAINTENANCE WORK SHEETS --TECHNICAL AND COMMAND MAINTENANCE AND INSPECTION WORK SHEETS, AND QUARTERLY PM SERVICE. WHAT YOU FILE IN YOUR 478 DEPENDS ON THE TECH SERVICE.


HOW DO I KNOW IF MY PIECE OF EQUIPMENT'S SUPPOSED TO HAVE AN "ORGANIZATIONAL EQUIPMENT FILE", OR NOT?
CHANGE 3 (11 DEC 58) TO AR 750-5 SAYS THAT THE HEAD OF EACH TECH SERVICE DECIDES THAT... IT ALSO SAYS THE JACKET FILE WILL STAY AT 2ND ECHELON WHILE THE PIECE REMAINS ASSIGNED TO A USING UNIT.
1
REGISTRATION NO.
242 709
SERIAL NO.
8004107
3
BUT, CONNIE, THIS PIECE OF EQUIPMENT IS...
1 THIS NUMBER AND YOUR EQUIPMENT'S SERIAL NUMBER'LL HELP YOU MATCH UP YOUR JACKET FILE WITH YOUR EQUIPMENT!
3 IF YOU DON'T FIND THE SERIAL NUMBER ON THE NOMENCLATURE PLATE, THEN LOOK ON THE FRONT OF THE FRAME... (OTHER PIECES WILL HAVE IT IN DIFFERENT PLACES.)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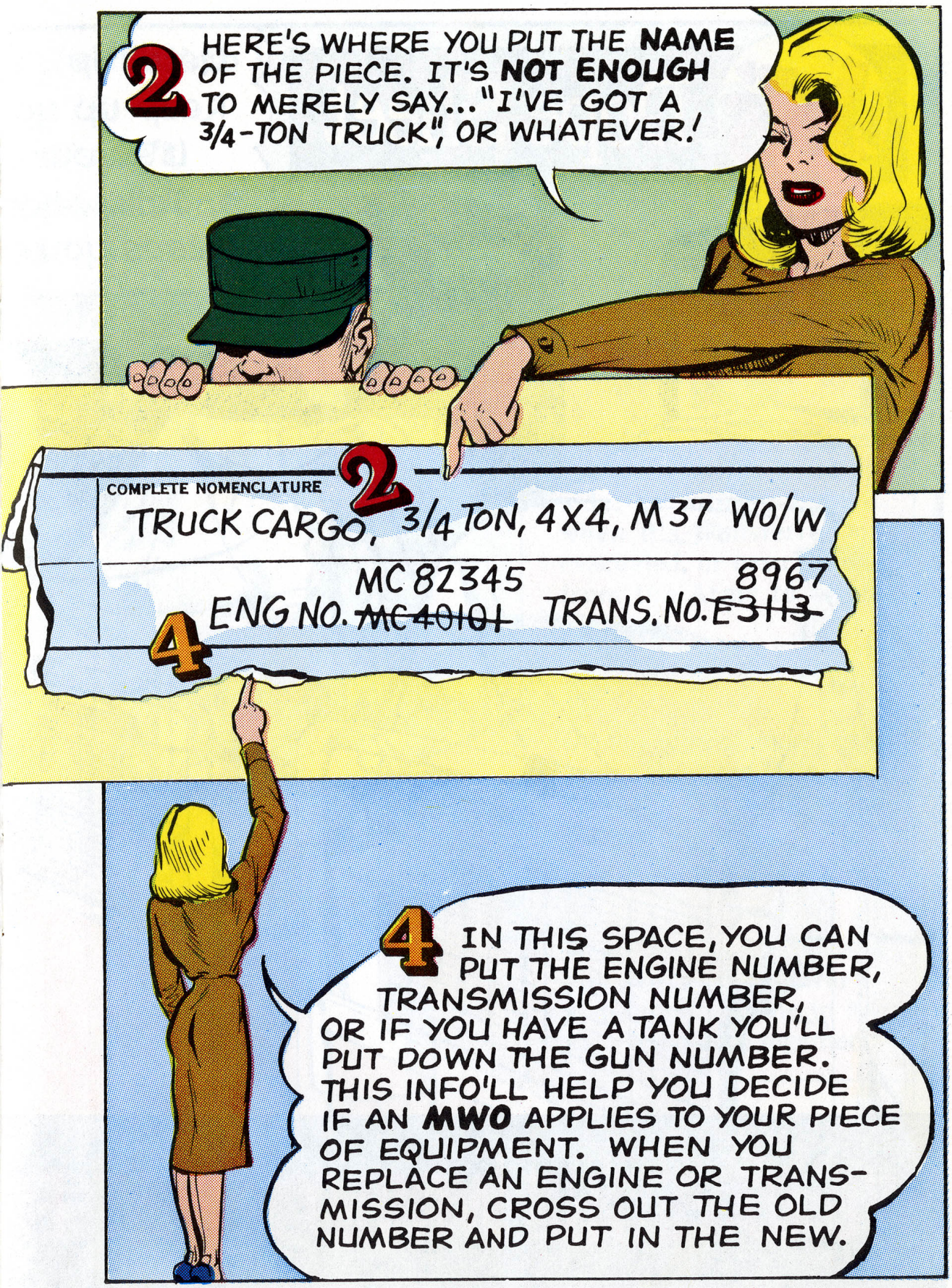
242 709
SERIAL No.
8004107
3
3 IF YOU DON'T FIND THE SERIAL NUMBER ON THE NOMENCLATURE PLATE, THEN LOOK ON THE FRONT OF THE FRAME... (OTHER PIECES WILL HAVE IT IN DIFFERENT PLACES.)
2 HERE'S WHERE YOU PUT THE NAME OF THE PIECE. IT'S NOT ENOUGH TO MERELY SAY... "I'VE GOT A 3/4-TON TRUCK", OR WHATEVER!
COMPLETE NOMENCLATURE 2
TRUCK CARGO, 3/4 TON, 4X4, M37 W0/W
ENG NO. MC 82345 MC 40101
TRANS. No. 8967 E3113
4
4 IN THIS SPACE, YOU CAN PUT THE ENGINE NUMBER, TRANSMISSION NUMBER, OR IF YOU HAVE A TANK YOU'LL PUT DOWN THE GUN NUMBER. THIS INFO'LL HELP YOU DECIDE IF AN MWO APPLIES TO YOUR PIECE OF EQUIPMENT. WHEN YOU REPLACE AN ENGINE OR TRANSMISSION, CROSS OUT THE OLD NUMBER AND PUT IN THE NEW.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COMPLETE NOMENCLATURE
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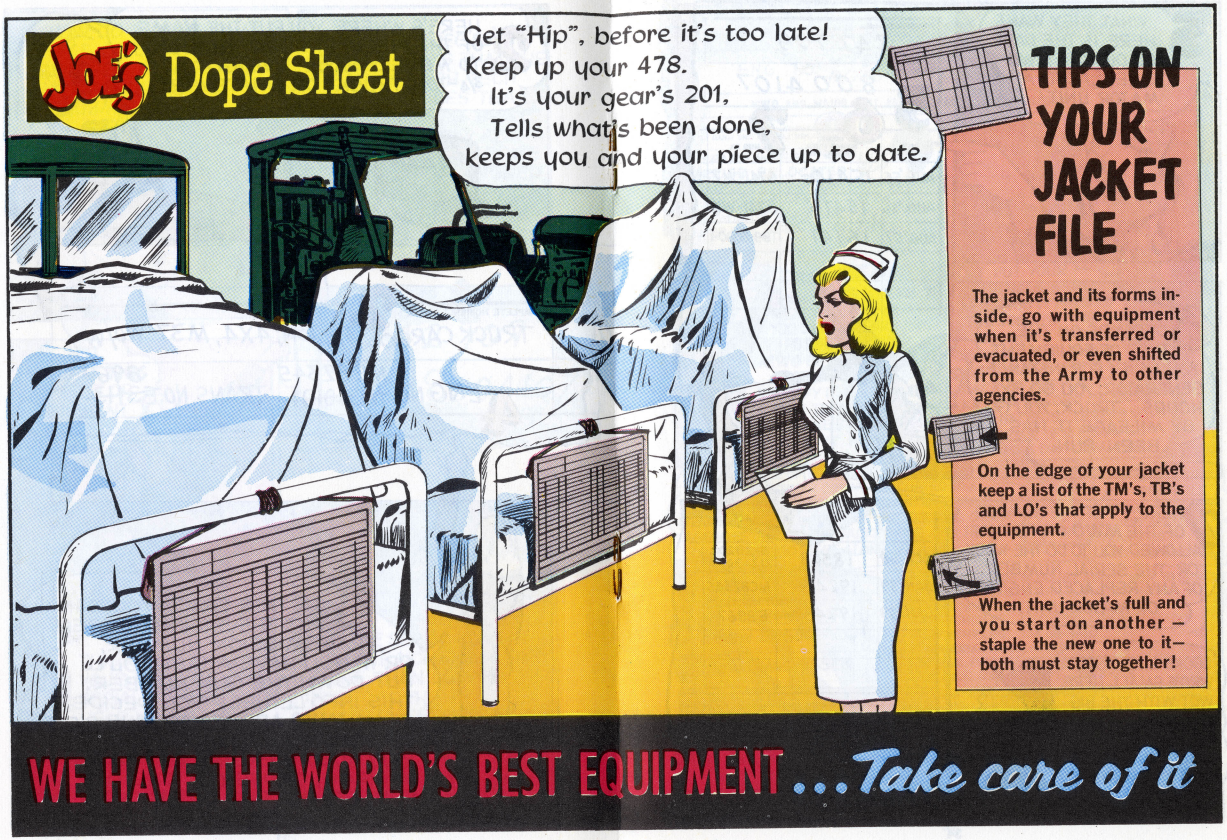
JOE'S
Dope Sheet
Get "Hip", b
Keep up you
It's your g
Tells what
keeps you a
WE HAVE THE WORLD'S BEST EQ


JOE'S Dope Sheet
Get "Hip", before it's too late!
Keep up your 478.
It's your gear's 201,
Tells what's been done,
keeps you and your piece up to date.
TIPS ON YOUR JACKET FILE
The jacket and its forms inside, go with equipment when it's transferred or evacuated, or even shifted from the Army to other agencies.
On the edge of your jacket keep a list of the TM's, TB's and LO's that apply to the equipment.
When the jacket's full and you start on another — staple the new one to it— both must stay together!
WE HAVE THE WORLD'S BEST EQUIPMENT ... Take care of it

efore it's too late!
ur 478.
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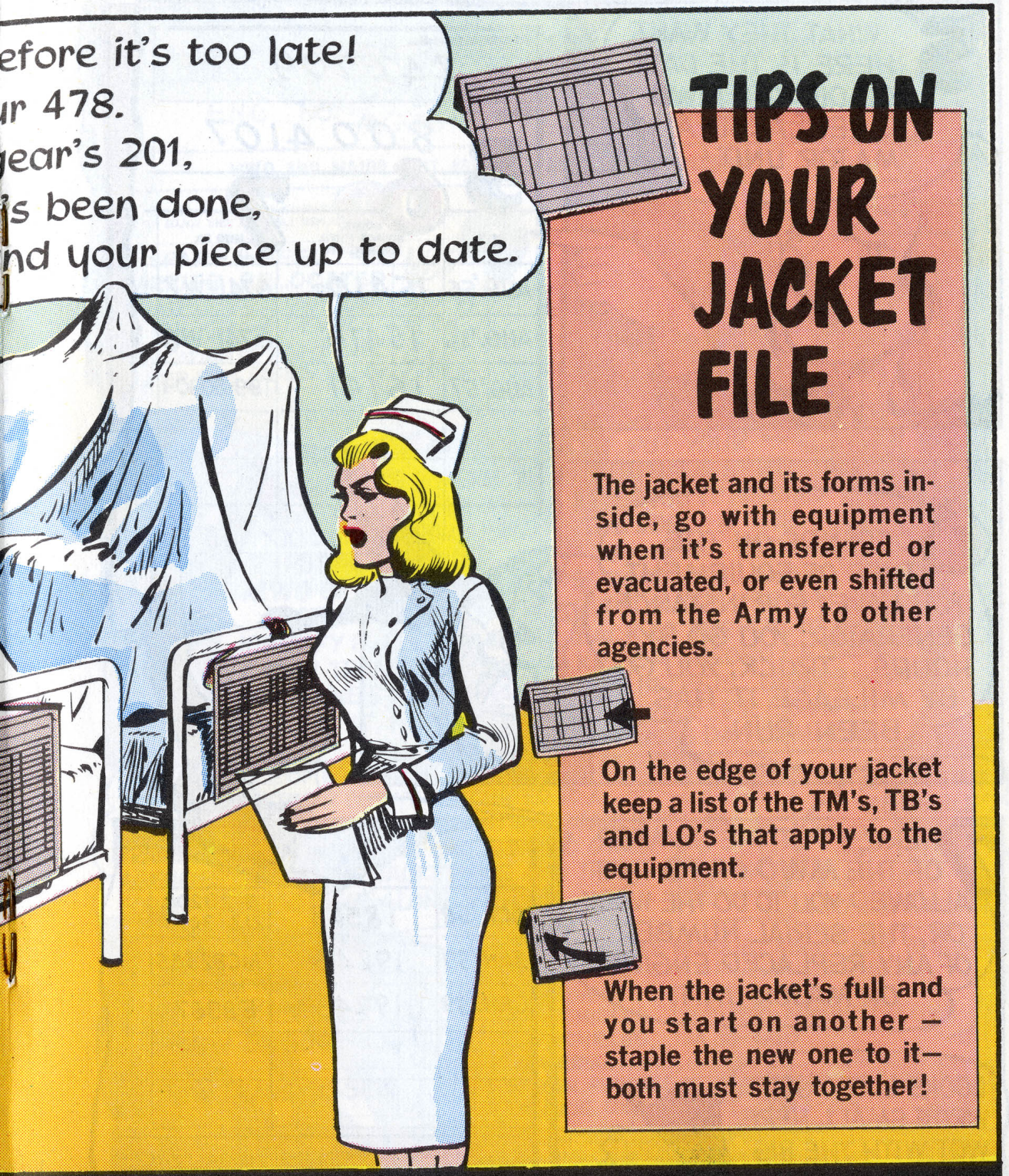
nd your piece up to date.



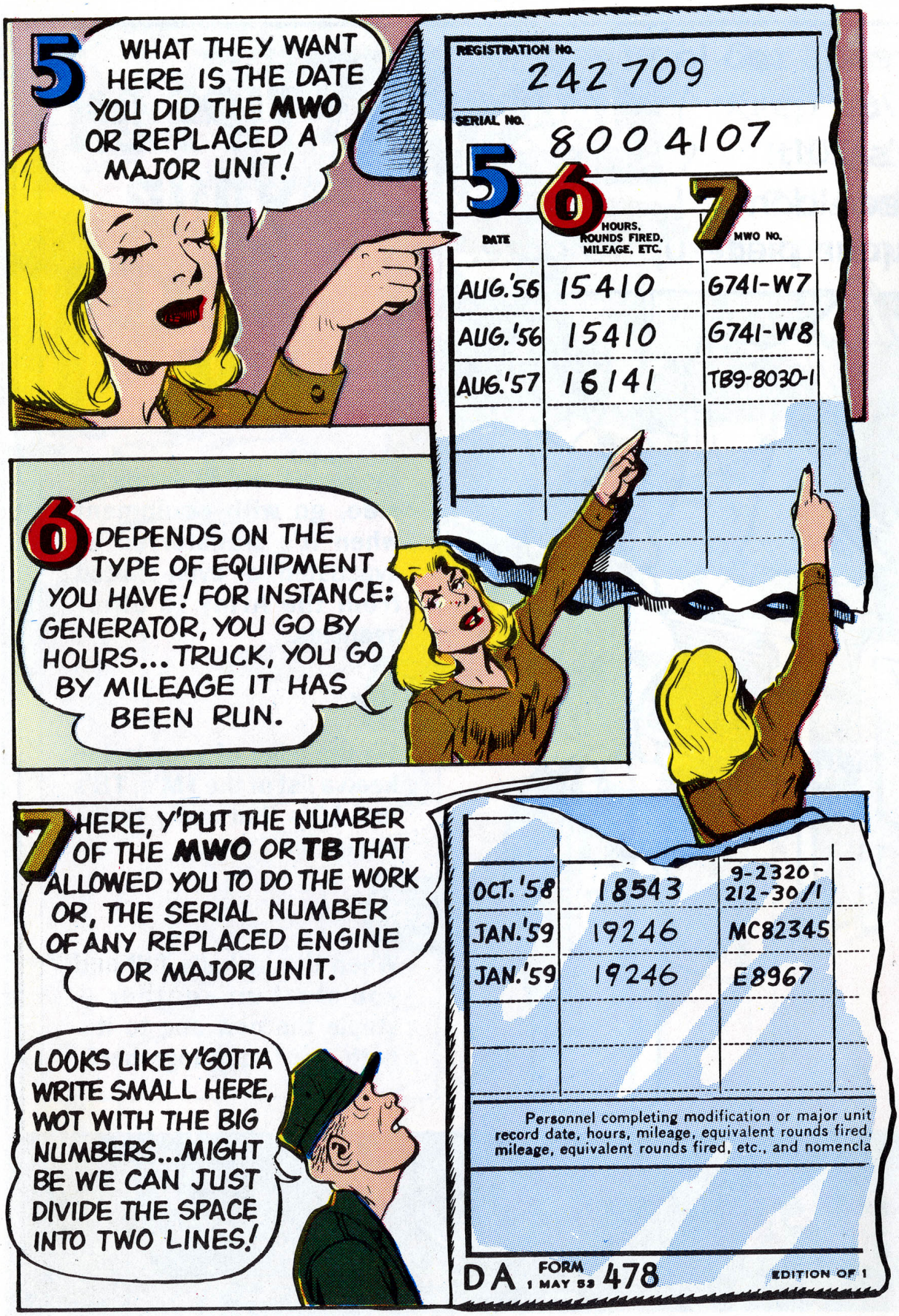
TIPS ON YOUR JACKET FILE

The jacket and its forms inside, go with equipment when it's transferred or evacuated, or even shifted from the Army to other agencies.

On the edge of your jacket keep a list of the TM's, TB's and LO's that apply to the equipment.

When the jacket's full and you start on another — staple the new one to it— both must stay together!

QUIPMENT . . . *Take care of it*


5
WHAT THEY WANT HERE IS THE DATE YOU DID THE MWO OR REPLACED A MAJOR UNIT!
REGISTRATION NO.
242709
SERIAL NO.
8004107
5
6
7
DATE
HOURS, ROUNDS FIRED, MILEAGE, ETC.
MWO NO.
AUG.'56
15410
G741-W7
AUG.'56
15410
G741-W8
AUG.'57
16141
TB9-8030-1
6 DEPENDS ON THE TYPE OF EQUIPMENT YOU HAVE! FOR INSTANCE: GENERATOR, YOU GO BY HOURS... TRUCK, YOU GO BY MILEAGE IT HAS BEEN RUN.
7 HERE, Y'PUT THE NUMBER OF THE MWO OR TB THAT ALLOWED YOU TO DO THE WORK OR, THE SERIAL NUMBER OF ANY REPLACED ENGINE OR MAJOR UNIT.
OCT.'58
18543
9-2320-212-30/1
JAN.'59
19246
MC82345
JAN.'59
19246
E8967
Personnel completing modification or major unit record date, hours, mileage, equivalent rounds fired, mileage, equivalent rounds fired, etc., and nomencla
LOOKS LIKE Y'GOTTA WRITE SMALL HERE, WOT WITH THE BIG NUMBERS...MIGHT BE WE CAN JUST DIVIDE THE SPACE INTO TWO LINES!
DA FORM 1 MAY 53 478
EDITION OF 1

COMPLETE NOMENCLATURE

TRUCK CARGO, 3/4-TON, 4X4, M37 WO/W

ENG NO. MC 82345 ~~MC 40101~~ TRANS. NO. E8967 ~~E3113~~

MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD

DESCRIPTION OF MWO COMPLET OR MAJOR UNIT ASSEMBLY REPLAC	INITIALS	DATE	HOURS, ROUNDS FIRED, MILEAGE, ETC.	MWO NO.	DESCRIPT OR MAJOR
SPARE WHEEL CARRIER RELOCATED	NEP				
IMPROVEMENT OF OIL GAGE LEVEL	NEP				
RELOCATION OF PERSONNEL HEATER FUEL SAFETY VALVE	EMZ				

8 HERE'S WHERE YOU TELL WHAT YOU DID. YOU DON'T HAVE TO PUT IN THE WHOLE MWO OR TB TITLE... BUT JUST ENOUGH TO IDENTIFY IT. ALSO, WHEN A NEW TRANSMISSION OR ENGINE'S INSTALLED, NOTE IT HERE!!

9 PUT YOUR INITIALS HERE AFTER YOU'VE FINISHED THE JOB... BY THE WAY, SOME TECH SERVICES, FIELD AND DEPOT SHOPS USE THE BACK OF THE 478 TO KEEP A RECORD OF REPAIR COSTS... OTHERS HAVE DA FORMS... F'R EXAMPLE: Q.M. USES DA FORM 1046.

WHEN A PIECE OF EQUIPMENT IS TRANSFERRED TO ANOTHER OUTFIT, EVACUATED TO A HIGHER ECHELON, AND EVEN WHEN IT'S PERMANENTLY TRANSFERRED FROM DEPT. OF THE ARMY TO OTHER AGENCIES OR MAP, THE JACKET FILE AND THE FORMS INSIDE GO RIGHT ALONG WITH IT.

AND KEEP IT "READABLE", CLEAN... IF IT GETS TOO MESSY, TRANSFER ALL THE INFO INTO A NEW ONE.

IGNITION TIMING MARK OF FAN DRIVING PULLEY	JAW
NEW ENGINE	JAW
NEW TRANSMISSION	JAW

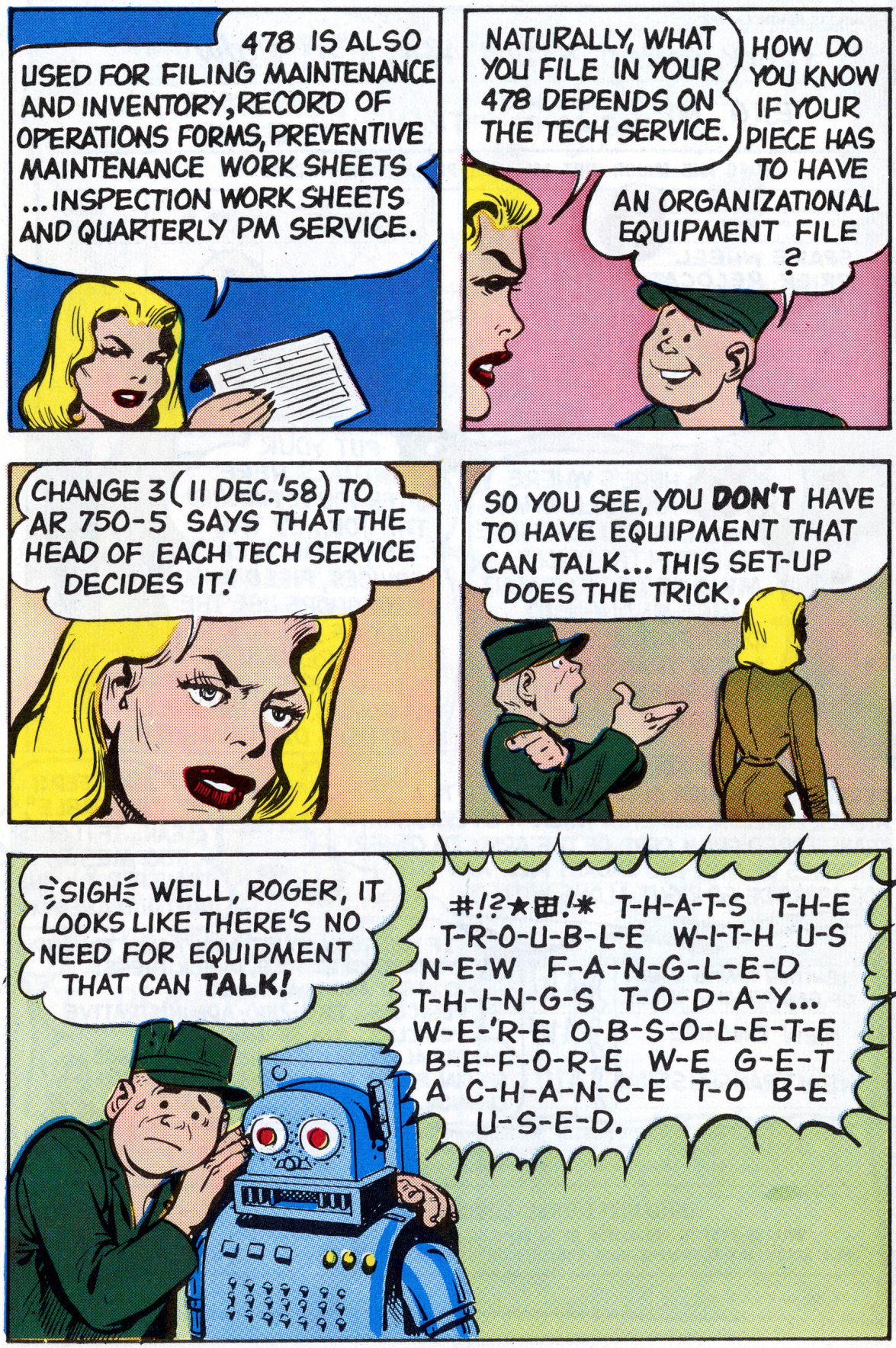
IF YOU'RE IN DOUBT ABOUT HOW TO HANDLE YOUR JACKET FILE, CHECK THESE:
COMBAT AND TRANSPORT VEHICLES... TM 9-2810; ADMINISTRATIVE VEHICLES... TM 38-660
MATERIAL HANDLING (MHE)... TM 10-1600
SPECIAL PURPOSE VEHICLE (SPV) TM 10-1400
CHEMICAL CORPS EQUIP'T... TM 3-313.

assembly replacement will record clearly description of work completed, and will initial in column pr
etc., and MWO number. When major unit assemblies (*engine, transmission, transfer case, and*
ture of unit assembly. Minor repairs, parts, and accessory replacements will not be recorded.

ORGANIZATIONAL EQUIPMENT FILE

WILL BE KEPT IN POSSESSION OF 2d ECHELON MAINTENANCE PERSONNEL AND WILL ACCOMPANY EQUIPMENT UPON TRANSFER OR WHEN EVACUATED TO HIGHER ECHELON

JUL 48 MAY BE USED.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NATURALLY, WHAT YOU FILE IN YOUR 478 DEPENDS ON THE TECH SERVICE.
HOW DO YOU KNOW IF YOUR PIECE HAS TO HAVE AN ORGANIZATIONAL EQUIPMENT FILE ?
CHANGE 3 (11 DEC. '58) TO AR 750-5 SAYS THAT THE HEAD OF EACH TECH SERVICE DECIDES IT!
SO YOU SEE, YOU DON'T HAVE TO HAVE EQUIPMENT THAT CAN TALK... THIS SET-UP DOES THE TRICK.
SIGH WELL, ROGER, IT LOOKS LIKE THERE'S NO NEED FOR EQUIPMENT THAT CAN TALK!
#!?★⊞!* T-H-A-T-S T-H-E T-R-O-U-B-L-E W-I-T-H U-S N-E-W F-A-N-G-L-E-D T-H-I-N-G-S T-O-D-A-Y... W-E-'R-E O-B-S-O-L-E-T-E B-E-F-O-R-E W-E G-E-T A C-H-A-N-C-E T-O B-E U-S-E-D.

CARBINE EJECTOR

Dear Half-Mast,

Is it just the ejector on the bolt of the M1 carbine that ejects all of the rounds from the weapon after they've been fired?

I've been told that the ejector only plays a part after firing the last round and the magazine spring comes into the picture by exerting pressure against the next round which ejects the last fired round.

This might have something to do with the ejection, but I think I'll stick with the idea of the ejector doing all the work.

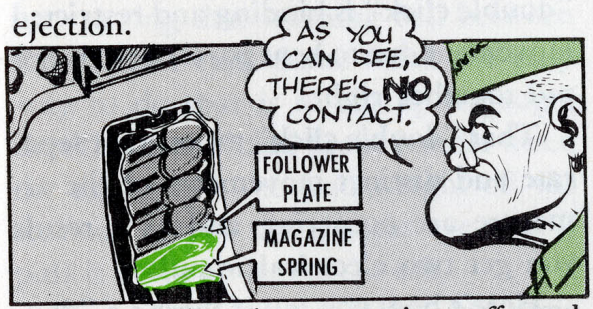
Am I right?

Pvt. P.C.

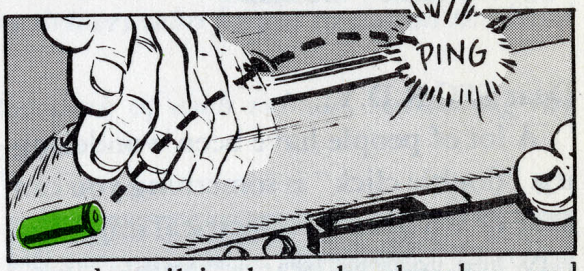
Dear Private P.C.,

Here's the story. The magazine spring and follower of your carbine don't play any part at all in ejecting spent or live rounds from the carbine. Ejection is a positive action—both in force and direction—even when you don't have a magazine on the weapon.

Here's a test you can make. Load a magazine with **dummy** rounds and put it into the carbine. Then hand cycle the weapon slowly. You'll see that the magazine follower has no contact at all with the round during extraction and ejection.



Now, take the magazine off and single load one **dummy** round into the chamber. Then pull the bolt back slowly to extract and eject. You'll see that the extractor firmly holds the



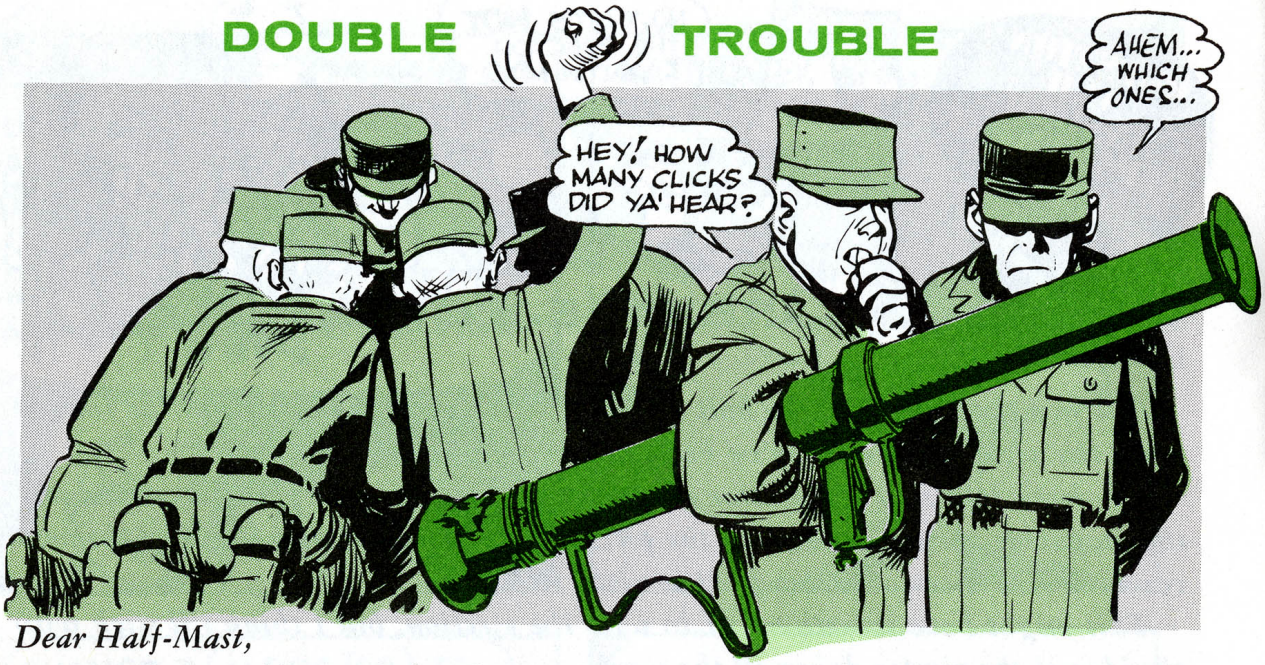
round until it clears the chamber, and then the ejector "kicks" the round to the right rear.

Repeat the same cycle, but this time pull the operating slide back sharply. The ejection pattern will still be the same—except for the speed of the round as it comes out of the receiver.

The same type of extraction and ejection applies to the M1903 Springfield, the M1, M14 rifles, the Browning Automatic Rifle, the M1911-11A1 Pistol, and the M1 and M2 Carbines.

Half-Mast

DOUBLE TROUBLE



Dear Half-Mast,

I've got a problem on the electrical firing mechanism (7140325) on the 3.5 rocket launcher.

Some small arms inspectors don't know the meaning of the term "double click" as used in para 79b (2) of TM 9-2002. They think it means that you can hear a double click. But what's meant here is a double electrical impulse.

I believe we could save Uncle Sam a lot of money if we could clear up what "double click" means.

SFC R.D.Y.

Dear SFC R.D.Y.,

A lot of people have been wondering if a "double click" is something you can hear or whether it is electrical impulses.

When you can hear a "double click" it could mean the mechanism is out of adjustment. But it may also mean that parts are worn so that you get movement in the mechanism when you squeeze the trigger.

You can also feel that "double click" as a "creep" while you're squeezing the trigger. This is caused by two things:

Parts in the mechanism may be worn and cause slippage or a sliding effect which causes the parts to move rearward. Then when the moving part gets to a high spot it stops. When this happens while you're firing you may think an electrical impulse has been generated and the rocket should have fired.

The second thing that can cause that "double click" is binding and restricted movement due to bent parts or parts not put together right.

That "double click" means that separate and distinct movements of the armature are occurring and as a result you get two electrical impulses.

Here's how you tell if there's a "double click" in your launcher:

Carefully squeeze the trigger to the fired position. You'll hear a click as the armature is moved rearward and then returns to original

position (this is one continuous movement). When the trigger hits the mechanism frame it causes the single click to be louder but you can't take that as a "double click."

If you do have a "double click" here's when you'll hear it:

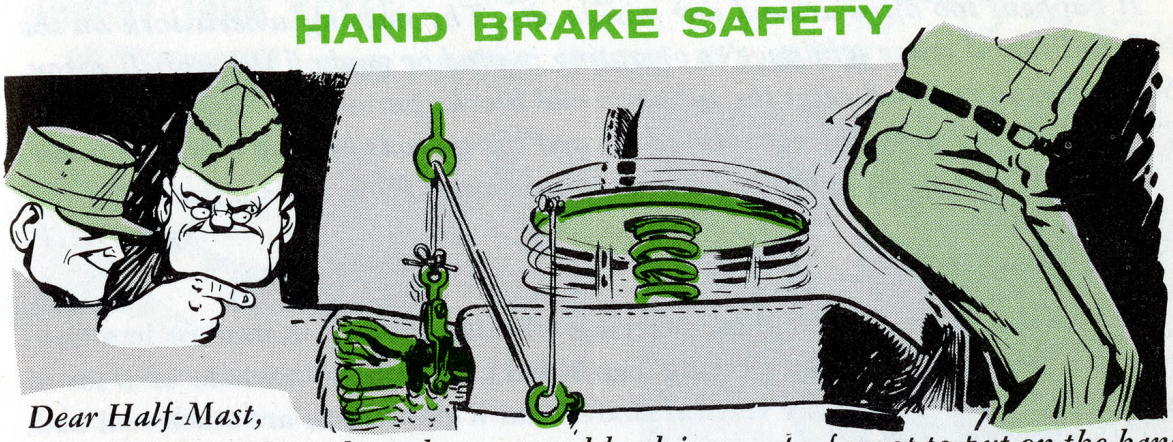
Once as the armature is moving rearward as the trigger's being squeezed. A second time when you continue to squeeze the trigger and it allows the armature to return to its original position due to improper adjustment of the trip mechanism.

In all cases, the inspector checks the firing mechanism with the right tester to find out how much repair or adjustment has to be made.

Testing will show if the "double click" is caused by some type of restriction, or by the actual movements of the armature.

Half-Mast

HAND BRAKE SAFETY



Dear Half-Mast,

A lot of accidents have been caused by drivers who forgot to put on the hand brakes when parking their vehicles.

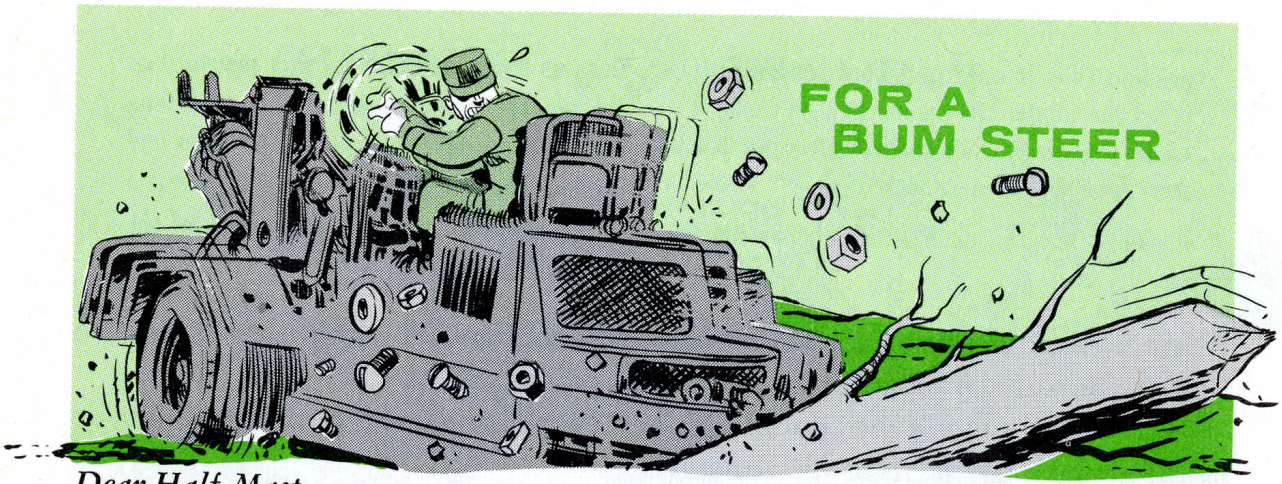
Why not attach a warning plate to the dash of each vehicle, reminding the driver to apply the hand brake when parked?

Sgt. E. W.

Dear Sgt E. W.,

Actually, it's a question of the best way to ring that warning bell between the driver's ears. Some think the only way to do that is to rig up a gadget that'll pull the hand brake handle when the driver lifts the lead weight off the seat—or maybe an electric eye that'll pull it when he leaves the cab.

Your plan's less expensive, but some drivers don't find time to read the data plates that're on the vehicles now. So, I'd say a better way to take care of this problem is to make it a part of your regular driver-training program.



Dear Half-Mast,

It happens too often around our missile site. The steering wheels lock on the NC-10 Federal crane while we're operating in mud or sand off the asphalt apron. Sometimes in real bad cases the supports and blocks put on the vehicle by MWO 10-1694-A1 (17 July 56) get sheared off and the tie rods beat up on the radiator.

The MWO was supposed to prevent this damage. How come it doesn't?

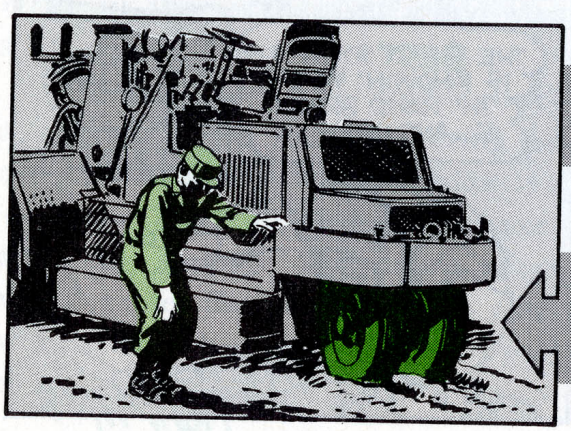
Sgt. H. U. P.

Dear Sergeant H. U. P.,

Here's the pitch: When those steering wheels get stuck in mud or in a hard rut and you wind up that steering handwheel, you shoot a whale of a lot of hydraulic power down that vertical shaft. And if the wheels are stuck real bad, something's gotta give.

Ten times outta nine it'll be the woodruff key near the top of the shaft. The key shears off and then the steering linkage zooms 'round, breaks off the MWO stops and rams into the radiator. A costly mess!

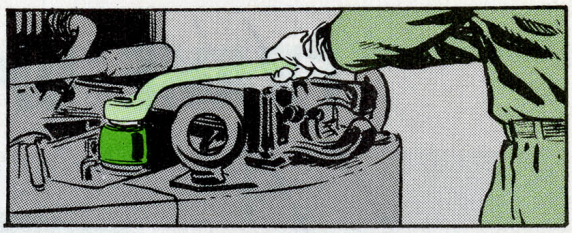
Same thing could happen when you try to back up with that rig in soft ground. The tricycle steering system is designed so the steering wheels are pulled and not pushed. When you back up, you put all the weight of the vehicle on these wheels. They always try to make a 180-degree turn...and wham! You've had it! What makes it extra tough is that you can't see the steering wheels from the driver's seat. You'll avoid all this trouble if you:



1. Stay on a hard surface, if you can. This rig wasn't designed to operate anywhere else.

2. Before backing up, check which way the steering wheels are facing and line 'em up the way they should be.

3. Make sure the hexagon nut at the top of the vertical shaft is muscle-tight. Check this nut every day before starting out. It'll help keep pressure off the woodruff key.



4. Never turn the handwheel unless the crane's in motion . . . and then always turn it gradually.

5. If you have to go on soft ground, try to go in so you won't have to BACK UP. Go forward only and only turn in wide, sweeping turns.

When you're dealing with power steering, Sarge, brain beats brawn every time.

Half-Mast

HONEST JOHN NOTES

ROTATE THE PLATE

Next time you're wandering around the M405 handling unit for your Honest John rocket, take a look at the snubber on the right fender.

If the hinge pin runs parallel to the ground, it needs changing—so it's vertical. When the pin runs vertical, the snubber plate mates with the fender right and when you're working with a load, the outrigger is more steady and isn't likely to ride under the launcher fender.

It doesn't take much to twist the snubber so the hinge pin is on the vertical.

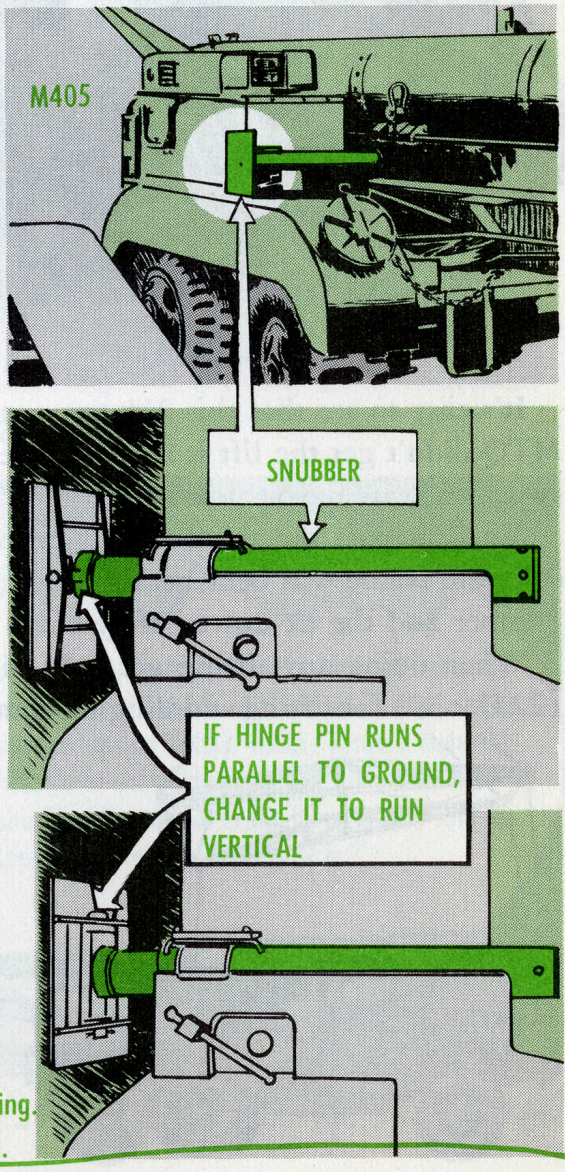
First . . . remove the four flat head screws.

Next . . . use a light hammer and brass drift to take off the cap.

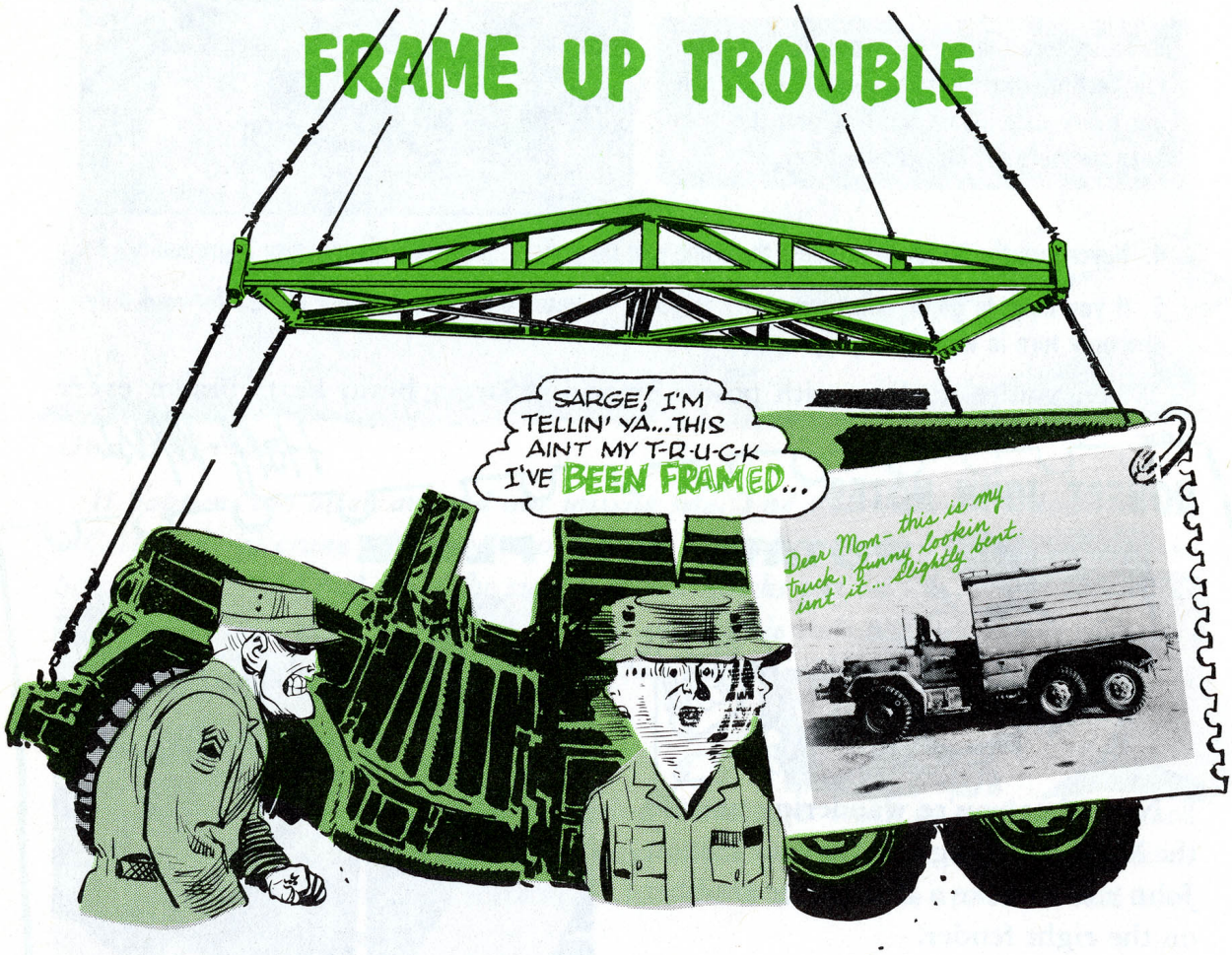
Then . . . turn the snubber plate so the hinge pin is vertical with the cotter pin on the bottom.

Next . . . line up the tapped holes in the cap with the countersunk holes in the snubber housing and then put the cap back in the housing.

Last . . . put back the four screws and stake them.



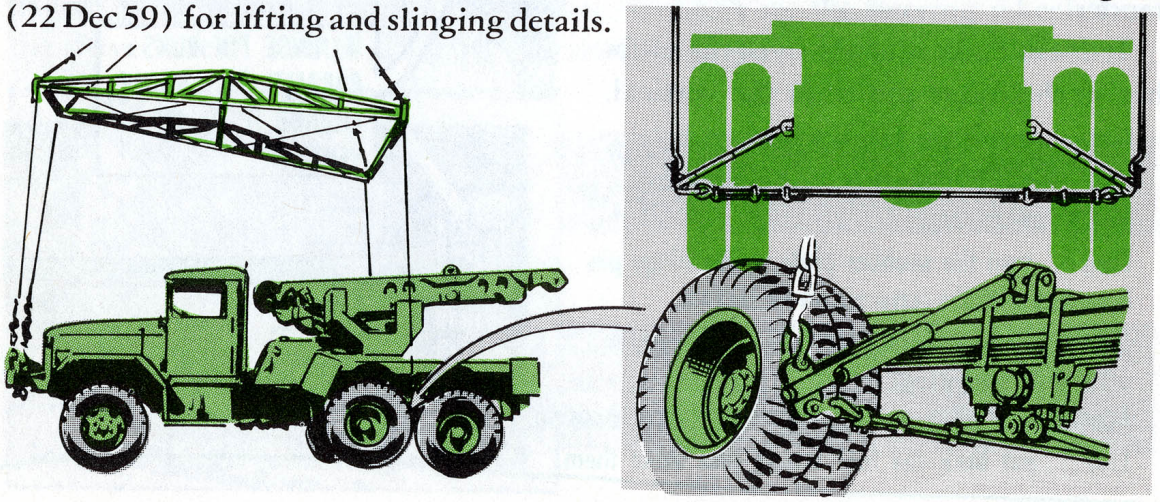
FRAME UP TROUBLE



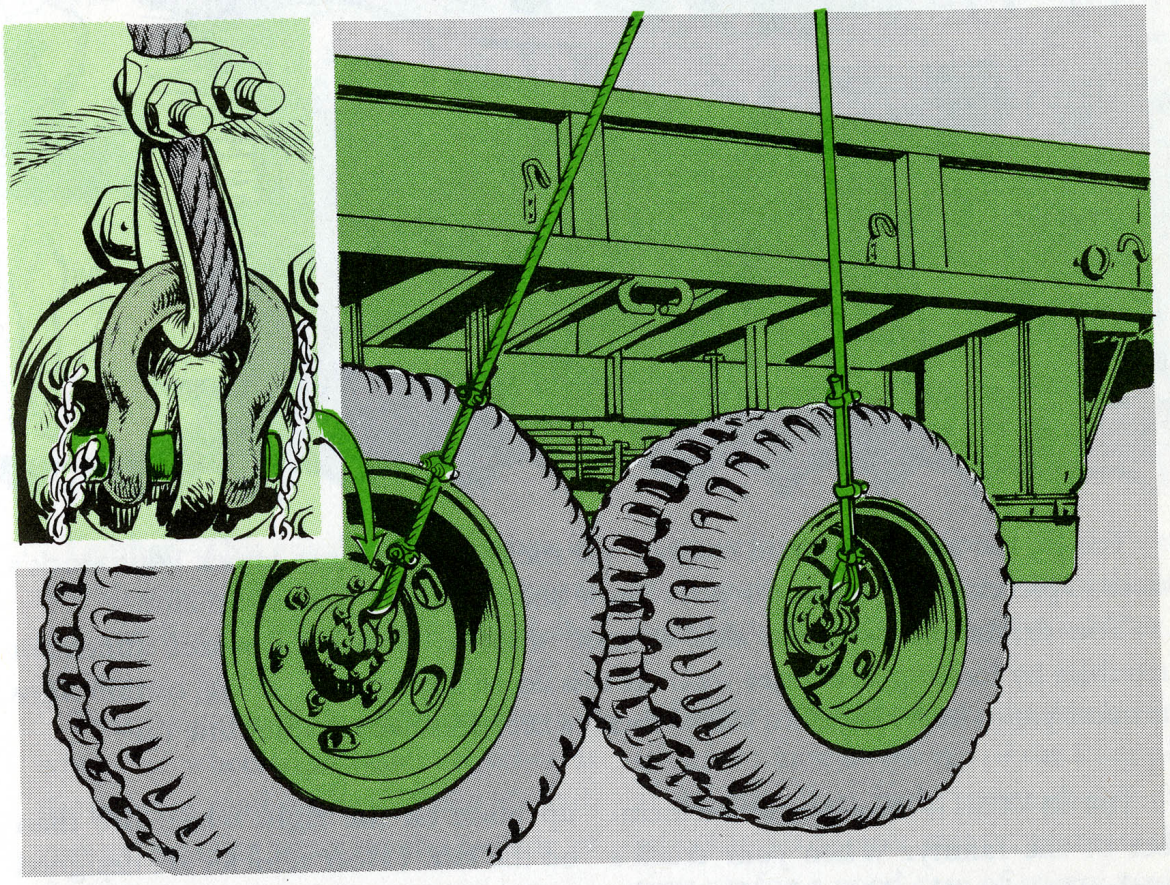
It's easy to see that this 2½-ton construction and maintenance truck V-17A/MTQ didn't get the lift it needed. The chassis frame bent about two inches between the cab and vehicle body.

Y'might pass the word that improper lifting procedure is the villain. In this case, the frame was bent because the truck was lifted from shackles on the front bumper and the tie-down safety chain shackles on the extreme rear of the frame.

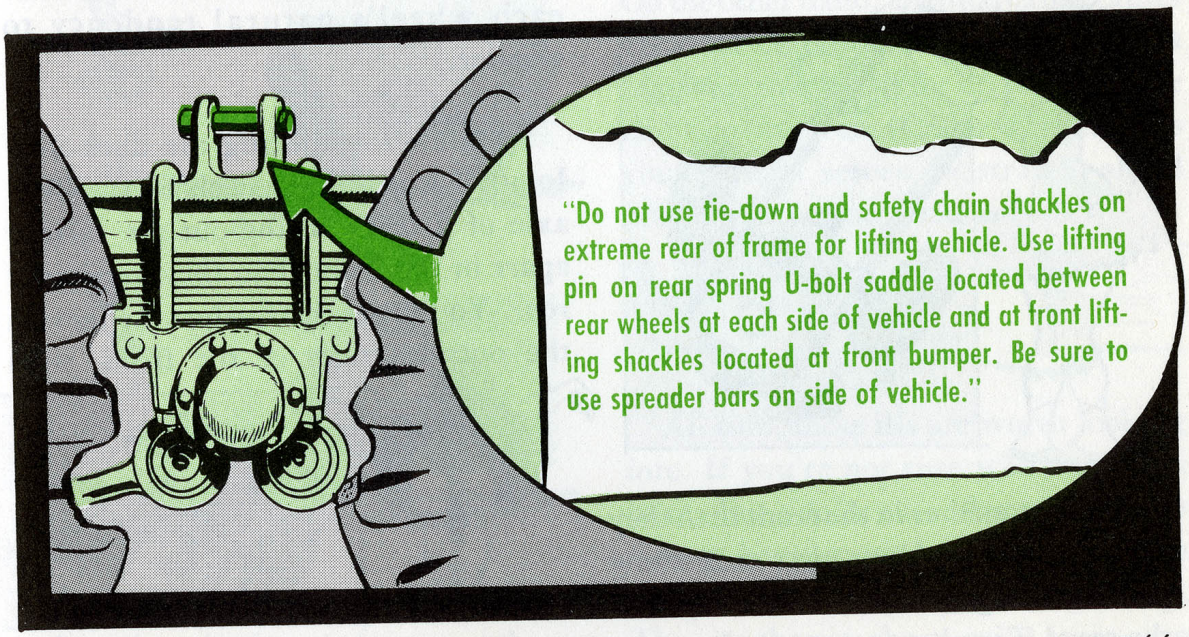
When doing any lifting get hold of TB 9-210/1 (21 July 59) and Change 1 (22 Dec 59) for lifting and slinging details.



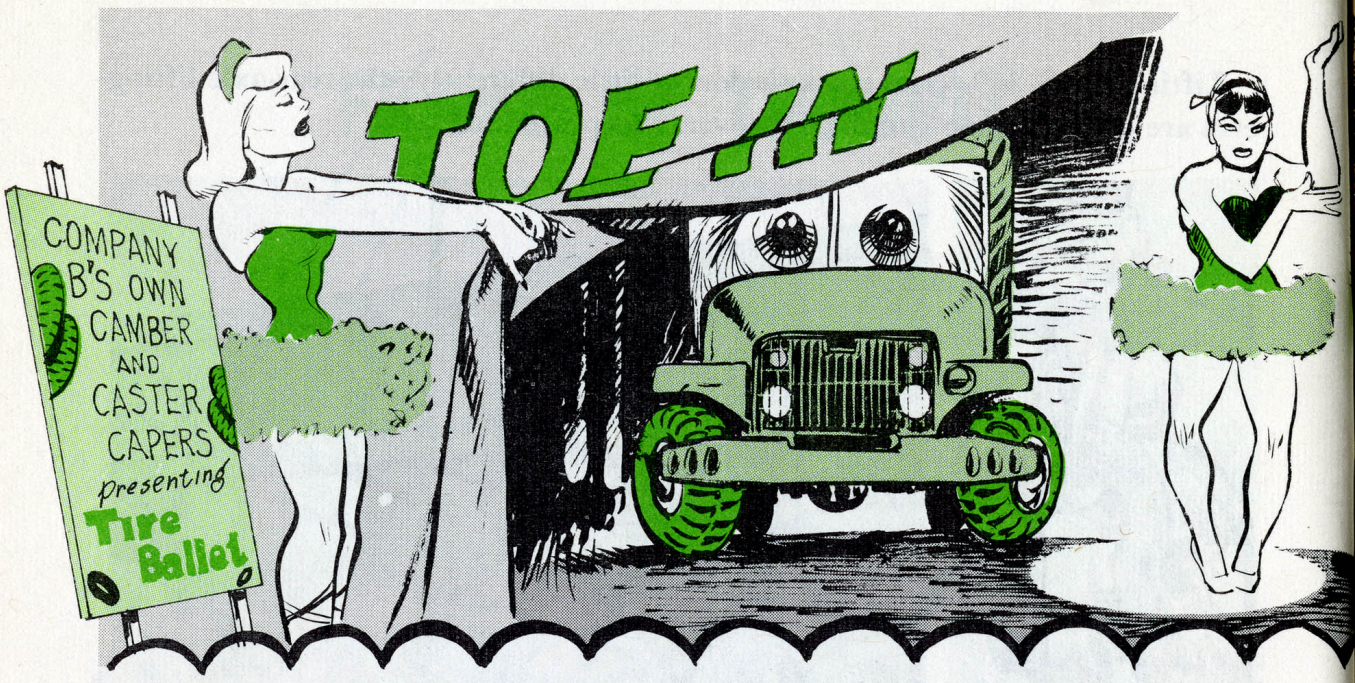
Lifting the G-749-series trucks is done a little differently—the rear-axle lifting-eyes are used. Change 1 to the TB covers this procedure.



Also stick to the caution in TM 9-8022 which says:



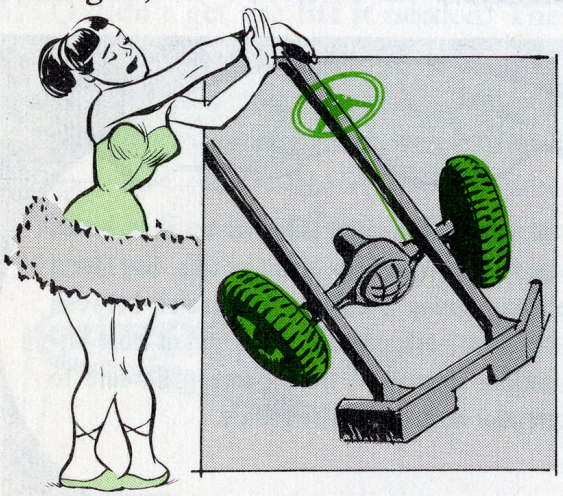
That's the story on all vehicles in the 2½-ton G-742 and the 5-ton G-744-series.



Toe-in, toe-out, caster and camber are the things that can knock your truck's tires to pieces. Yet, how many guys know the difference between them?

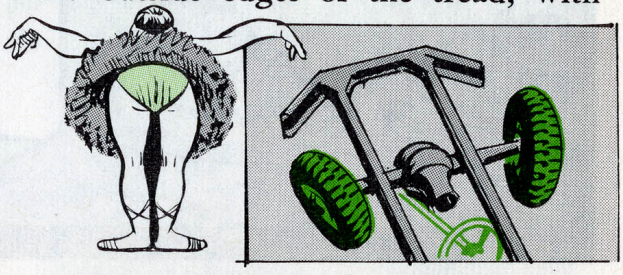
You drivers ought to be able to spot whether you have wheel alinement troubles by looking at the tire wear. If this doesn't tell you anything, certain signs around your tires will. Here's how these wheel and tire troubles line up—

Toe-In—This is the pigeon-toed member of the family. When your truck's toeing-in, the wheels on the front axle

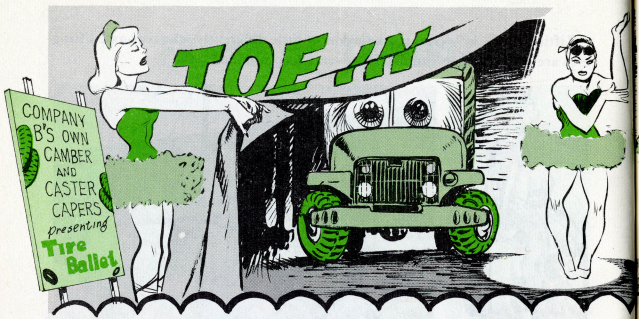


are closer together in the front than they are in the rear. Your tires will show feathered edges on the inside edges of the tread if you've got too much toe-in. This bird's feathers will usually show up more on the right wheel tire than on the left. (Most vehicles are designed with a little toe-in in order to counteract each wheel's natural tendency to wander.)

Toe-Out—Introducing the duck-foot. In other words, the wheels on the front axle of a truck toeing-out are farther apart in the front than they are in the rear. You'll get the feathered edges on the outside edges of the tread, with



more wear generally showing up on the left tire.



Toe-in, toe-out, caster and camber are the things that can knock your truck's tires to pieces. Yet, how many guys know the difference between them?

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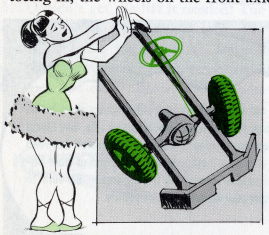

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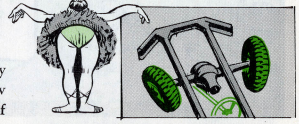

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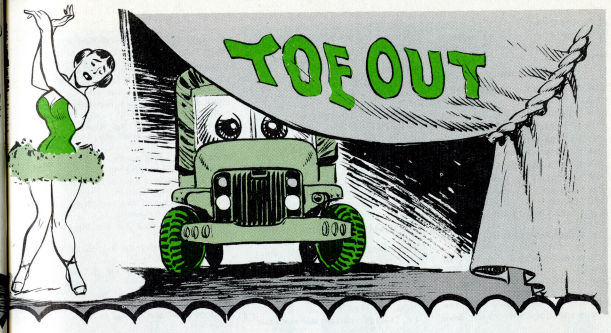
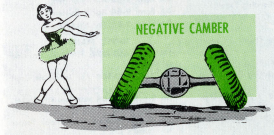


Camber—This sneaky devil comes in two shapes—positive camber and negative camber. Camber is the tilt of the wheels.

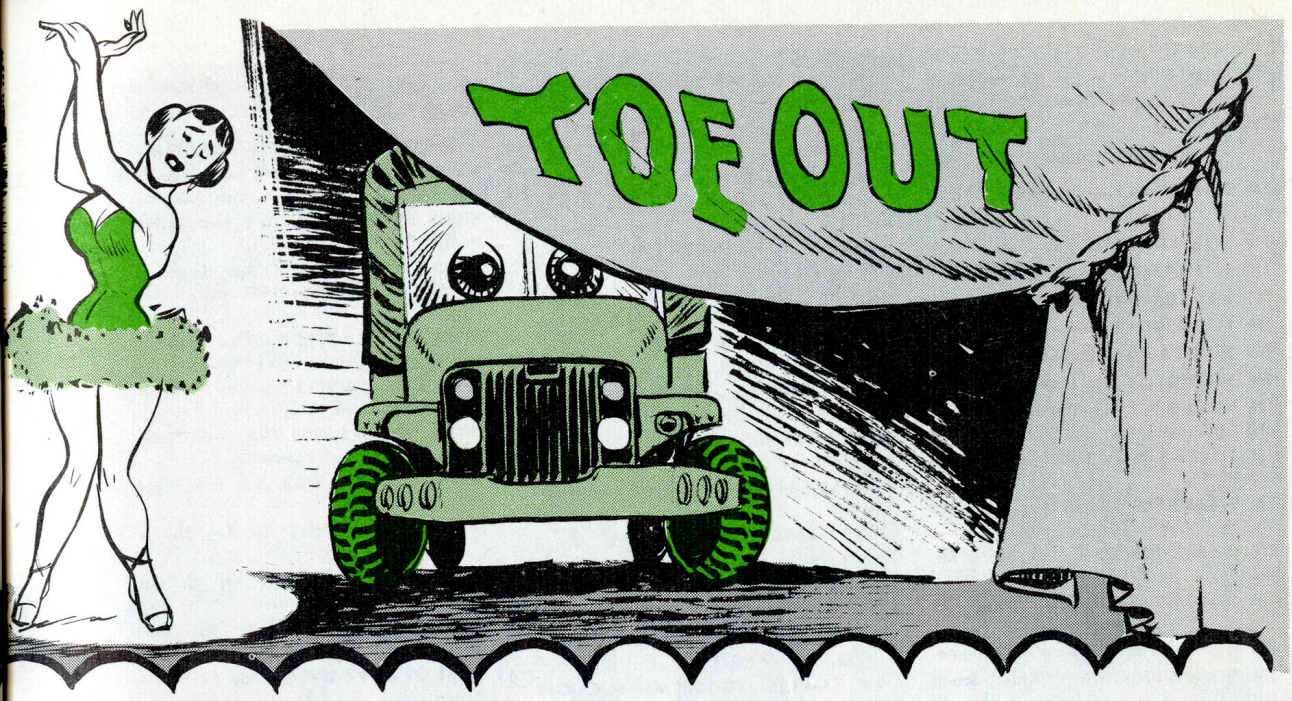
Positive camber (bow-leggedness) is when the wheels are closer together at the point of road contact. When it's bad, you get heavier wear on the outside of the tire.



Negative camber (knock-kneed) is when the wheels are closer together at the top. Bad negative camber shows up as more wear on the inside of the tire. (The right adjustment on most vehicles calls for a slight bit of positive camber.)

Caster—Caster means the backward tilt of the axle or the tilt of the king pin at the top. Too little caster causes the wheel to wander or weave, and sets the tires up for a good case of spotty wear. On the other hand, unequal caster causes the wheel to pull to one side. When this happens, that tire is set up for excessive and uneven wear. (Caster is what helps your wheels return to straight-ahead position after you make a turn.)

All told, these ills are worth looking into. If you're not sure which one you have—but you're sure that something's wrong because you're getting uneven tire wear—roll over to your unit's shop. The mechanic there will steer you straight.



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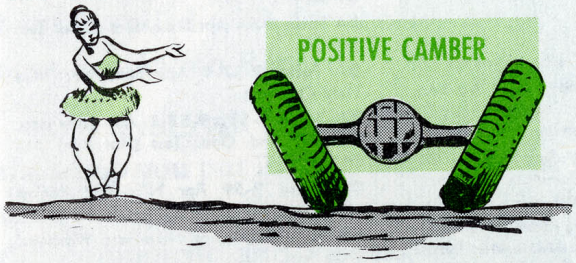

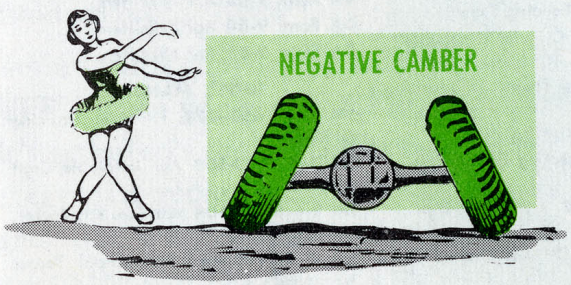

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All told, these ills are worth looking into. If you're not sure which one you have—but you're sure that something's wrong because you're getting uneven tire wear—roll over to your unit's shop. The mechanic there will steer you straight.

A selected list of recent publications of interest to Organizational Maintenance Personnel.

TECHNICAL MANUALS

TM 1-1H-13-553 May Inspect Aircraft Tubing.

TM 1-1H-37A-1058 May Instal Decal.

TM 1-1L-19A(T)D-4-20P Mar.

TM 1-1L-20A-4-20P Mar.

TM 1-1L-23D-4-20P Mar.

TM 1-1U-1A-1033 May Instal Facilities.

TM 1-4W2-1-54 Apr Scott Tail Wheels.

TM 1-8S5-2-2-1 Mar Electrical Switches and Actuators.

TM 1-14S2-3-1 Mar Life Preserver, Type MA-2.

TM 3-4240-220-12-20P Apr Filter Unit Gas-Part M8A2.

TM 3-6665-202-12 Apr Analyzing Kit, M26.

TM 5-2410-206-12P Mar Tractor, Cat D-8.

TM 5-2805-206-14P Apr Mil Std Engine.

TM 5-3805-200-15 Mar Loader, Scoop type.

TM 5-3805-223-20P Apr Trailer M-R-S Mod 110AGW.

TM 5-4310-219-10 Apr Compressor, Ingersoll-Rand Mod DR 600.

TM 5-4310-234-12P Mar Compressor, Reciprocating.

TM 5-4520-200-20P Apr 400,000-BTU Heater.

TM 5-4610-202-20P Apr Water Purif Unit.

TM 9-1055-208-15 Mar 762-mm Rocket Handling Unit M405.

TM 9-1410-500-20P Mar Hawk XM3

TM 9-1440-400-20P Mar LaCrosse I.

TM 9-2300-223-20P Mar Master Load List Tank—Auto.

TM 9-2300-224-20 Mar Carrier Per, M113.

TM 9-2330-208-15 Feb Tank Trailer 12-Ton M131, M131A1, M131A2.

TM 9-2330-234-15 Mar Trailer M454.

TM 9-4935-451-10 Apr AT Missile SS-10.

TM 9-4935-501-20P Mar Shop Eq Hawk.

TM 10-3930-212-10 Apr Fork Lift, Rough Terrain.

TM 11-1290-200-12P Apr Flash Ranging Set AN/GTC-1.

TM 11-1520-204-10P Apr Signal Equip in H-13H.

TM 11-3895-205-10P Apr Reel Units RL-26A, B, C.

TM 11-5805-201-12P Feb Telephone Set TA-312/PT.

TM 11-5810-208-12P Apr TSEC/KY-1.

TM 11-5810-214-12P Mar Teletype TSEC/KW-26B.

TM 11-5815-263-12 Apr Teletypes AN/FGC-56, AN/FGC-58.

TM 11-5815-264-12 Apr Teletypes TT243/FG, TT/247/FG.

TM 11-5820-349-10P, -20P Mar Radio Set AN/TRC-27A.

TM 11-5820-361-20P Apr Radio Set AN/TRC-47.

TM 11-5820-362-10P Apr Radio Set AN/GRC-41.

TM 11-5821-222-10P, -20P Mar Maintenance Kit, ARC Part/DWG, No. FES-1258.

TM 11-5821-226-12P Mar Controls, Radio Set C-1341/ARC, C-1341A/ARC.

TM 11-5826-208-12P Apr Receiving Set, Radio AN/ARN-68.

TM 11-5826-212-12P Mar Control Receiver C-1342/ARN.

TM 11-5830-224-12P Mar Panel, Radio Freq SB-449/GSO.

TM 11-5840-211-12 Apr Radar Set AN/PPS-4.

TM 11-5841-211-12P Apr SA-448/ALR-8.

TM 11-5895-259-12P Feb Power Supply.

TM 11-5895-260-12P Feb Power Supply.

TM 11-5935-204-15P Mar Connector, Plug, Elec U-185A/G.

TM 11-5935-205-15P Mar Connector, Recep, Elec U-187/G.

TM 11-6125-210-10P Mar Motor-Gen PU-126/U, PU-126A/U.

TM 11-6130-220-12P Mar Rectifiers RA-91, -91A, -91B, -91C.

TM 11-6625-342-12P Apr Multimeters ME-6B/U, ME-6C/U, ME-6D/U.

TM 11-6625-345-10 Mar Calibrator Set, Frequency AN/URM-18.

TM 11-6660-206-20P Apr Rawin Sets AN/GMD-1, AN/GMD-1A, AN/GMD-1B.

TM 11-6940-204-10P, -20P Mar Practice Equips.

TM 11-7490-200-20P Mar Reproducers, Sound AN/FNP-1, AN/FNP-1A.

TECHNICAL BULLETINS

TB AVN 21-40 May Padded Door Shield, H-19 and H-21.

TB AVN 23-5-1 Mar.

TB AVN 23-13 May Ice.

TB AVN 23-43 May Overvoltage Prot Sys.

TB AVN 23-44 May Steel-Welding, Machining, Forming Corrosion-Resisting Steels and Nickel Chromium Iron Alloy.

TB AVN 23-45 May Designation Conversion of Wrought, Aluminum and Aluminum Alloys (All Aircraft).

TB AVN 23-46 May Identif, Inspect, Test, Storage of Rubber Materials, Elastic Shock Absorber Cord, Exerciser Cord.

TB AVN 23-47 May Bending Tubing.

TB AVN 25-42 May Cylinder Capscrews and Washers.

TB AVN 25-26 Apr Engine, Magneto Instal.

TB CML 59 Apr Mask M18.

TB ENG 355 May Checking Engine Compression.

TB 9-1410-250-12/2/1 Apr Nike-Herc, Heat Pads.

TB 9-1440-250-20/7 Apr Nike-Herc Test Air-Bleed.

TB 9-2330-212-12/2 Apr 50,000 BTU Air Heater (Hunter Mod DH73-3).

TB 9-5013-1/4 Apr Insp for Missile-Body Skin (Nike-Ajax).

TB 9-5038-12/1 Apr Air-Tur-Alt Sy Con Sur on 2173 and Sub Rds (Corporal II).

MODIFICATION WORK ORDERS

MWO 9-2350-202-10/1 Apr 40-MM Gun M42, Cover for Computer Assy.

MWO 55-1520-207-10/1 May Cabin Heater Operation (HU-1A).

MWO ORD Y75-W4 Apr Launcher XM36E1 Mod Beam Latch-Switch (Nike-Herc).

MWO ORD Y75-W18 Apr Mod Kit Instal Rail-Warning Device (Nike-Herc).

MWO ORD Y75-W23 Apr Mod Launcher Beam Wedge-Lock (Nike-Herc).

MWO ORD Y75-W62 Mar Drain Holes to Erecting Beam (Nike-Herc).

MWO ORD Y75-W63 Apr Rep Ident Plates (Nike-Herc).

MWO ORD Y77-W41 Apr Rep Booster-Ign Cable (Nike-Herc).

MWO ORD Y77-W50 Apr Rep of Cont Act Assy Filters (Nike-Herc).

MWO ORD Y77-W52 Apr Isol Bat-Charge Cir (Nike-Herc).

MWO ORD Y87-W7 Apr Add Att Plates (Nike-Herc).

LUBRICATION ORDERS

LO 5-3805-206-20-2 Apr Intrench Mach Combat.

LO 9-2350-215-10 Apr M60 Tank.

LO 9-2300-224-10 Apr M113 APC.

FORMS

DA Form 9-38 Mar Corporal II.

DA Form 9-51 Mar Prescribed by TM 9-5040-4-1-12.

DA Form 9-52 Mar Corporal II.

DA Form 9-53 Mar Corporal II.

DA Form 9-54 Apr Nike-Herc Missile Elect Checkout.

DA Form 9-55-1 Apr Nike-Herc Air and Oil Ser Acc Pr Sup.

DA Form 9-56 Apr Nike-Herc Cal of Test Set Gr.

DA Form 9-57-1 Apr Nike-Herc Miss Elect Checkout.

DA Form 9-58, 9-58-1 Apr Nike-Herc Fuel Ser and Oper Test (Hot Run) Acc Pr Sup.

DA Form 9-59 Apr Nike-Herc Rocket Motor.

DA Form 9-60 Apr Nike-Herc Warhead Body Sect.

DA Form 9-63 Apr Nike-Herc.

DA Form 9-64 Apr Nike-Herc.

DA Form 9-65 Apr Nike-Herc.

SUPPLY MANUALS

SM 9-4-1450-N04 Fuel Draining Kit M54.

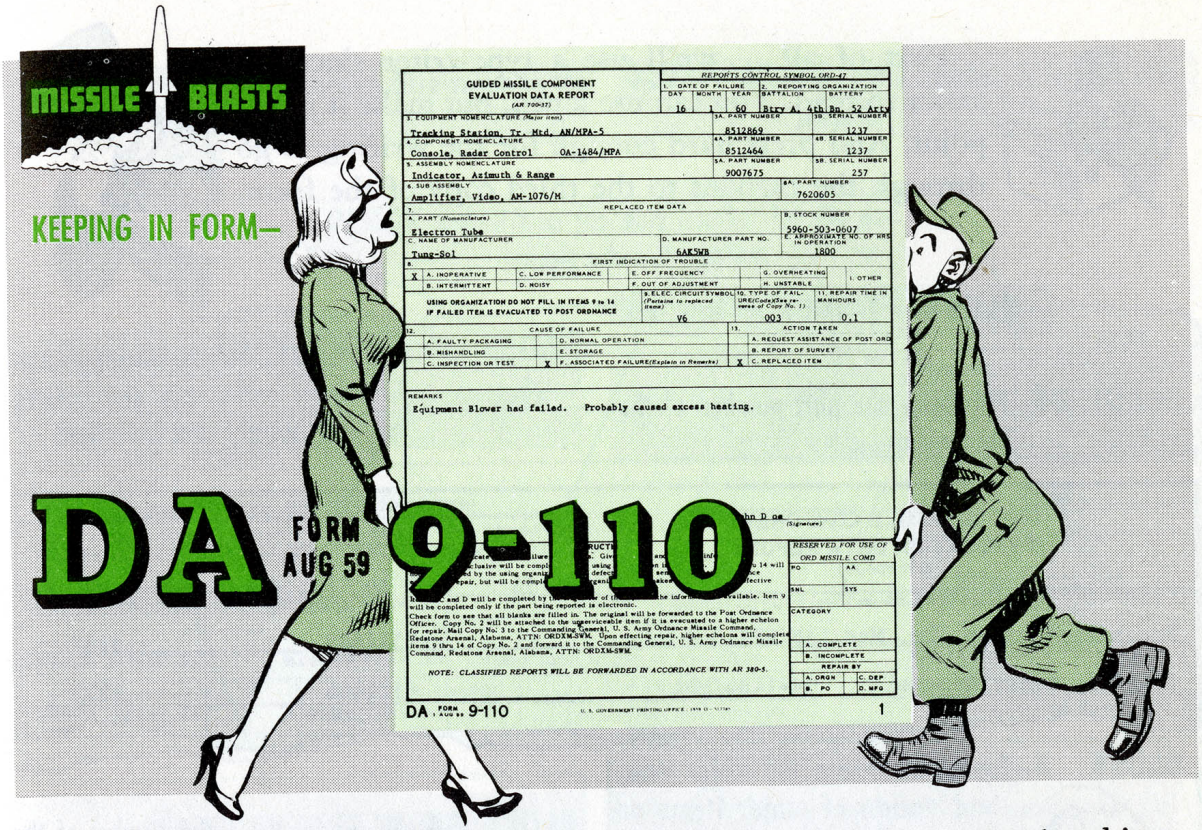
SM 5-4-2090-S08 Apr Inflatable Craft Repair Kit.

SM 9-4-5180-A04 Mar Tool Kit, Rocket, 762-MM.

SM 9-4-5180-A84 Mar Aerial Target Air-Frame.

SM 9-4-5180-A17 Mar Tool Kit, Auto 2nd Echelon Supplemental.

SM 11-4-5180-S11 (Corrected Copy) Mar Tool Equipment TE-5.



Here it is . . . the DA Form 9-110 you guided missile outfits'll be getting right soon, if you don't have it already.

It's full handle is Guided Missile Component Evaluation Data Report—but it's called CER for short—Component Evaluation Report.

As it says in AR 700-37 (27 Aug 59), the scoop you put in the CER'll help the slide rule people find ways to improve the equipment and cut down on its maintenance.

You think maybe you can stop using UER's when you get the CER's? Not so. It's set up so's the CER will be used for every part replacement. The UER still gets used when things stack up according to the word in AR 700-38.

One thing is for sure . . . you won't find a form that's much easier to fill out. And it's not going to take long to learn to do seeing's how you use a separate form for every failure or replaced item.

You can see by the instructions that you're supposed to send the form to Redstone Arsenal Ordnance people. But that doesn't mean it's strictly a one tech service deal. You want to send in a report to Redstone Arsenal on all tech service items that're installed in or looked on as a necessary part of the Ordnance end item. That's what the AR says.

OK . . . let's say reports on failure of the 6AK5WB electron tube—a Signal item—start piling up at Redstone. That's when the slide rule pushers decide whether the tube or the circuit is the trouble spot. If it's the tube, the Signal people'll help straighten out things.

If the form's going to do any good, it's got to be used right. So leave us run through it, block-by-block, using what could be an actual failure in a Nike-Hercules system to kinda get the feel of things.

First of all . . . we'll use a typewriter since it's easier to read. You can use a pen, but make it a ball point. And press hard enough for the writing to go through the carbons to the third copy of the form.

BLOCK 1—This is an easy one.

BLOCK 2—It's a tight fit, but this is also a snap. Give your entire unit designation, not just battery and battalion.

BLOCK 3A—Put down the part number of the equipment.

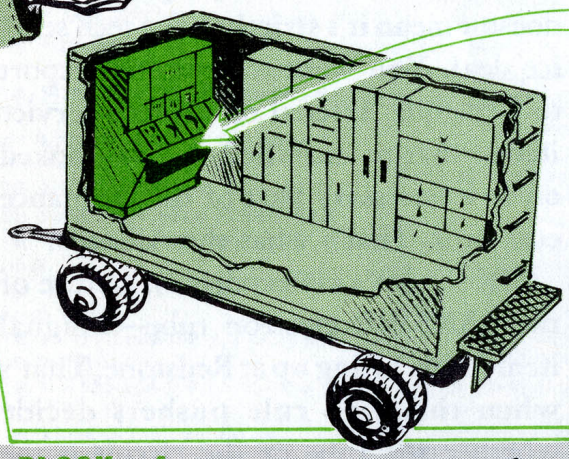
GUIDED MISSILE COMPONENT EVALUATION DATA REPORT
(AR 700-37)

REPORTS CONTROL SYMBOL ORD-47

1. DATE OF FAILURE			2. REPORTING ORGANIZATION	
DAY	MONTH	YEAR	BATTALION	BATTERY
16	1	60	Btry A, 4th	Bn, 52 Arty

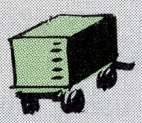
3. EQUIPMENT NOMENCLATURE *(Major item)*	3A. PART NUMBER	3B. SERIAL NUMBER
Tracking Station, Tr. Mtd, AN/MPA-5	8512869	1237
4. COMPONENT NOMENCLATURE	**4A. PART NUMBER**	**4B. SERIAL NUMBER**
Console, Radar Control OA-1484/MPA	8512464	1237
5. ASSEMBLY NOMENCLATURE	**5A. PART NUMBER**	**5B. SERIAL NUMBER**

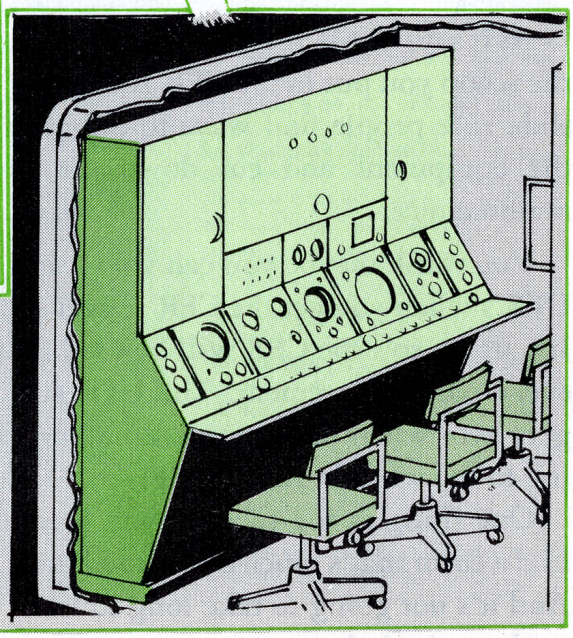
BLOCK 3—Equipment means the major item, combination of major items or groups of end items which do a special job in the missile system. In this case it's the RC van. Another time it might be the missile, etc.



BLOCK 3B—This is for the serial number of the equipment.

BLOCK 4—A component is a group of connected assemblies and parts that can operate by itself, but may be controlled from the outside or get its power from another source. The example shows the RC console. A computer or electrical generator also are called components.





BLOCK 4A—The part number here refers to the component.

BLOCK 4B—The serial number is for the component.

BLOCK 5A—Fill in the part number for the assembly when it applies.

NCLATURE (Major)	3A. PART NO. 8512869	1237
Tracking Station, Tr. Mtd. AN/MPA-5		
4. COMPONENT NOMENCLATURE: Console, Radar Control OA-1484/MPA	4A. PART NUMBER 8512464	4B. SERIAL NUMBER 1237
5. ASSEMBLY NOMENCLATURE: Indicator, Azimuth & Range	5A. PART NUMBER 9007681	5B. SERIAL NUMBER 257
6. SUB ASSEMBLY: Amplifier, Video, AM-1076/M	6A. PART NUMBER 7620605	

7. REPLACED ITEM DATA

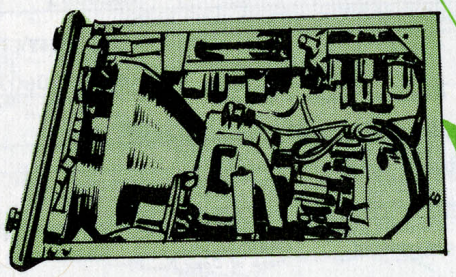
A. PART (Nomenclature)	B. STOCK NUMBER	C. NAME OF MANUFACTURER	D. MANUFACTURER PART NO.	E. APPROXIMATE NO. OF HRS IN OPERATION
Electron Tube	5960-503-0607	Tung-Sol	6AK5WB	1800

8. FIRST INDICATION OF TROUBLE

X	A. INOPERATIVE		C. LOW PERFORMANCE		E. OFF FREQUENCY		G. OVERHEATING		I. OTHER								
	B. INTERMITTENT		D. NOISY		F. OUT OF ADJUSTMENT		H. UNSTABLE										

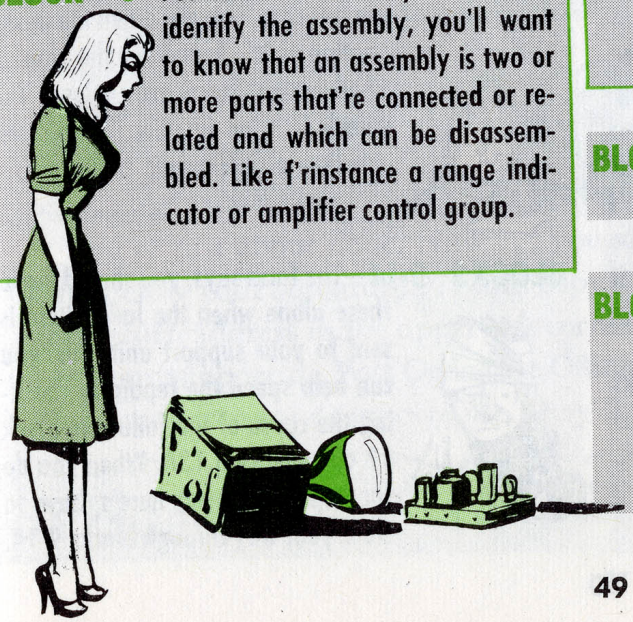
9. ELEC. CIRCUIT SYMBOL 10. TYPE replaced

BLOCK 5B—The serial number wanted is for the assembly, that is, when it applies.



BLOCK 6—It figures that a sub assembly is part of an assembly. Just remember that a sub assembly is replaceable, but it has parts that're also replaceable themselves. The parts may have a common mounting or mount on each other. As for example with a missile, it'd be the modulator within the beacon within the guidance package.

BLOCK 5—For failures where you have to identify the assembly, you'll want to know that an assembly is two or more parts that're connected or related and which can be disassembled. Like f'rinstance a range indicator or amplifier control group.



BLOCK 6A—The part number needed is for the sub assembly.

BLOCK 6B—This is the phantom block. There's enough of space to the left of Block 6A for missile units that have to account for subassemblies to fill in the subassembly (or module) serial number.

BLOCK 7A—This is where you get down to the meat of things by naming the failed or replaced part. And a part is an item that can't usually be disassembled. If it can, it doesn't really pay to do it. Besides an electron tube, this also includes things like a resistor or a tube socket. If you don't replace a part, and the item (chassis, assembly, etc.) is sent to your support unit for repair, leave this section blank for them to fill in when they do the repairing.

BLOCK 7B—This is where you put down the FSN for the part.

BLOCK 7C—The name of the outfit that made the part goes here. As it says in the instructions, if you don't know the name, don't bother. You might write "unknown" so the guy reading the report doesn't think maybe you just skipped over the block.

BLOCK 7D—This speaks for itself. If you don't know it, handle it like Block 7C.

		4A. PART NUM	8512
Control	OA-1484/MPA	8512464	1237
NOMENCLATURE		5A. PART NUMBER	5B. SERIAL NUMBER
Indicator, Azimuth & Range		9007681	257

6. SUB ASSEMBLY	6A. PART NUMBER
Amplifier, Video, AM-1076/M	7620605

7. REPLACED ITEM DATA

A. PART (Nomenclature)		B. STOCK NUMBER
Electron Tube		5960-503-0607
C. NAME OF MANUFACTURER	D. MANUFACTURER PART NO.	E. APPROXIMATE NO. OF HRS IN OPERATION
Tung-Sol	6AK5WB	1800

8. FIRST INDICATION OF TROUBLE

X	A. INOPERATIVE		C. LOW PERFORMANCE		E. OFF FREQUENCY		G. OVERHEATING		I. OTHER
	B. INTERMITTENT		D. NOISY		F. OUT OF ADJUSTMENT		H. UNSTABLE		

USING ORGANIZATION DO NOT FILL IN ITEMS 9 to 14 IF FAILED ITEM IS EVACUATED TO POST ORDNANCE	9. ELEC. CIRCUIT SYMBOL (Pertains to replaced items)	10. TYPE OF FAILURE (Code) (See reverse of Copy No. 1)	11. REPAIR TIME IN MANHOURS
	V6	003	0.1

12. CAUSE OF FAILURE

	A. FAULTY PACKAGING		D. NORMAL OPERATION		A. REQUEST ASSISTANCE OF POST ORD
	B. MISHANDLING		E. STORAGE		B. REPORT OF SURVEY
			ED FAILURE (Explain in Remarks)	X	C. REPLACED ITEM

13. ACTION TAKEN

BLOCK 7E—This can be the toughest to answer. Try getting the scoop from the logbook, previous maintenance records or the date the equipment was put into use. If those records don't give you the answer, put down the best possible estimate and mark it "Estimate."

BLOCK 9—In this case, you put down the designation that's found on the chassis. And notice those instructions. This block is filled in only if you're reporting an electronic failure.

BLOCKS 8A-8I— Check one of these blocks that best tells how you knew the part was failing or had failed. If you check Block I, be sure to explain it in the "Remarks" block.

BLOCKS 9-14—The form says, you should leave these alone when the failed item is sent to your support unit. But, you can help speed the repair by checking the cause of the failure in block 12 and checking 13A. When you do the replacing, tho, here's how to work your way through blocks 9-14.

BLOCK 10—You flip over the first copy of the CER to get this info. Use any code that applies. The headings "Mechanical," "Electrical," and "Miscellaneous" are there to help you spot the right code.

022	NO OSCILLATION
450	OPEN
003	OPEN FILAMENT
460	OPEN PRIMARY
470	OPEN SECONDARY
	OVERLOADED

USING ORGANIZATION DO NOT FILL IN ITEMS 9 to 14 IF FAILED ITEM IS EVACUATED TO POST ORDNANCE	9. ELEC. CIRCUIT SYMBOL (Pertains to replaced items)	10. TYPE OF FAILURE (Code) (See reverse of Copy No. 1)	11. REPAIR TIME IN MANHOURS
	V6	003	0.1

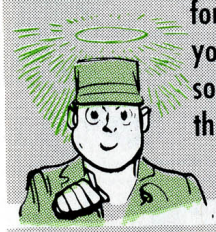
12. CAUSE OF FAILURE				13. ACTION TAKEN	
	A. FAULTY PACKAGING		D. NORMAL OPERATION		A. REQUEST ASSISTANCE OF POST ORD
	B. MISHANDLING		E. STORAGE		B. REPORT OF SURVEY
	C. INSPECTION OR TEST	X	F. ASSOCIATED FAILURE (Explain in Remarks)	X	C. REPLACED ITEM

BLOCK 11—No sweat here.

REMARKS

Equipment Blower had failed. Probably caused excess heating.

BLOCK 12—You want to be honest here if the form's going to mean anything. If you mishandled the failed item, say so. Don't blame the failure on something like faulty packaging.



BLOCK 13—Check A if you needed help from your support unit... B if it applies (and it won't very often)... and C if A or B, you replaced the failed item.

BLOCK 14—This is the "Remarks" section although it's not numbered. Here's where you shoot the works. Put down anything you think'll help the tech services get a good picture of things as they gather facts and figures on the various parts that fail. Use extra sheets if you need 'em.

John Doe
(Signature)

INSTRUCTIONS	RESERVED FOR USE OF ORD MISSILE COMD
Complete in triplicate for each failure that occurs. Give complete and accurate information. [illegible] will be completed by the using organization in all cases. Ite[illegible]	

You're just about done. Now . . . you sign your name . . . print your name and rank below your signature . . . fold copy 3 of the form and staple it . . . put your unit return address in the upper left corner . . . and drop it in the mail. Send copy 1 to your supporting Post Ordnance Officer. If you made the repair, keep copy 2. If not, send it to your support unit. They'll do the repairing and take care of copy 2.

B. PO	D. MFG

DA FORM 1 AUG 59 9-110

U. S. GOVERNMENT PRINTING OFFICE : 1959 O - 517785

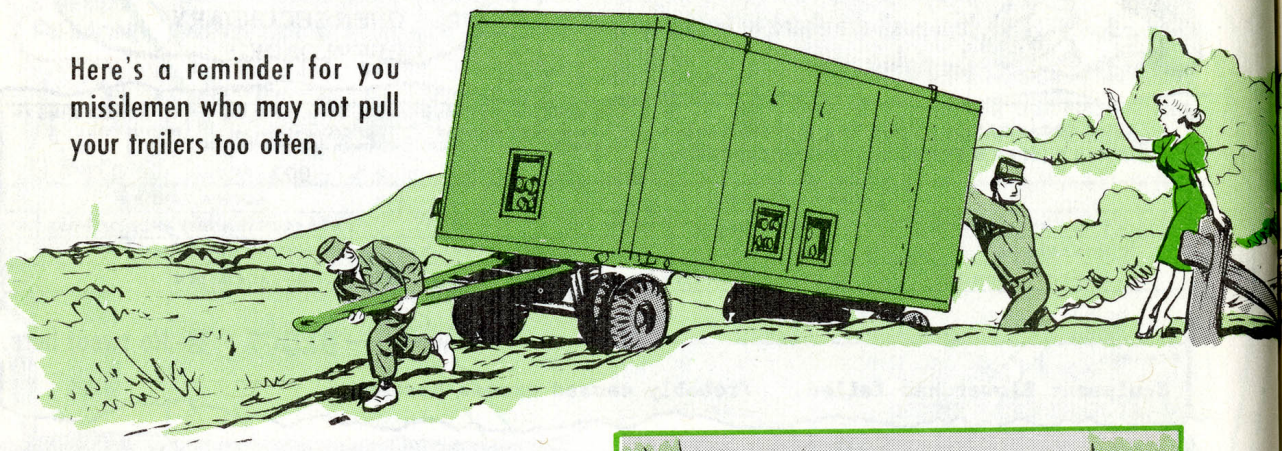
1

MISSILE BLASTS

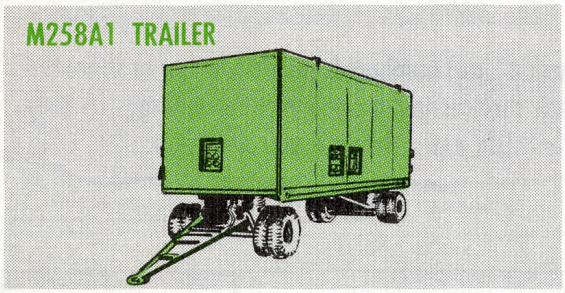
ON YOUR NIKE MISSILE TRAILERS—

BRICK-A-BRACK

Here's a reminder for you missilemen who may not pull your trailers too often.



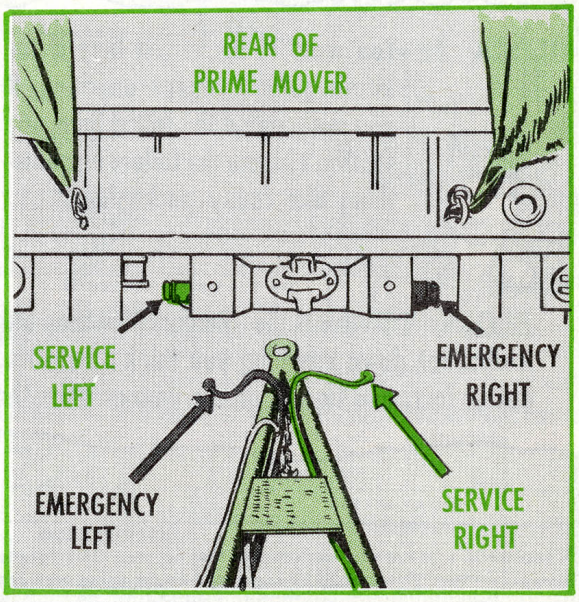
It's said: Happy is the round peg in the round hole; and happy are the haulers who know where and how the lines from their trailers to their prime movers are connected.



So it is with the hookup of your Nike missile trailers—M258, M259, M260, M261, M262, M258A1, M259A1, M260A1, M261A1 and M262A1. They're alike on the surface, but underneath, at their braking systems, they're as different as Romeo and Juliet.

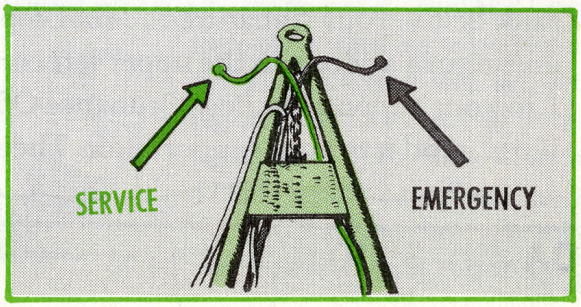
Take those A1 trailers, which come to you with air-over-hydraulic brake systems. You have two hoses for these trailers—called by the names SERVICE and EMERGENCY.

Put yourself so you're facing the rear of the prime mover. The trailer's SERVICE HOSE is on your right—and its



EMERGENCY HOSE is on your left. But, up on the prime mover, the SERVICE receptacle is on your left and the EMERGENCY connection is on your right.

This means that when you hook up, the lines'll be crossed. If you hook 'em



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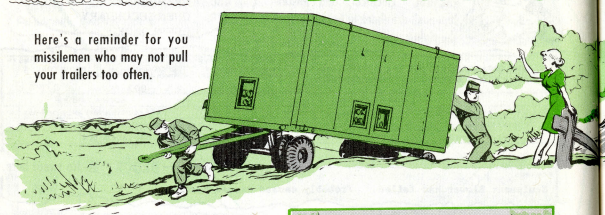

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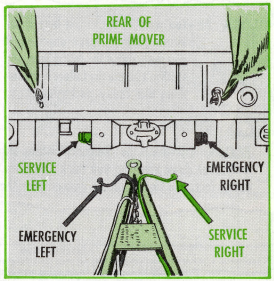

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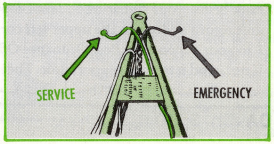
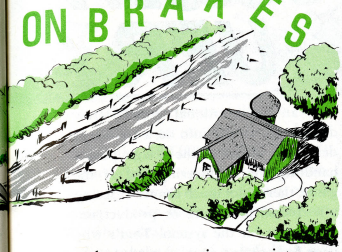
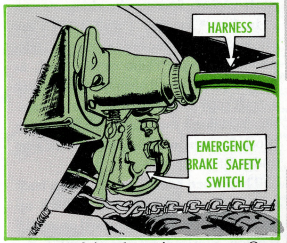


ON BRAKES



up the wrong way, air will come into your brake system, but won't be able to get out. Means locked brakes and awfully hot brake linings and drums. Could even give the brake shoes burned-through soles.

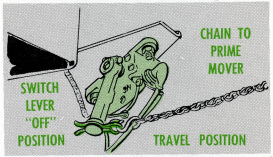
The M258, M259, M260, M261, and M262 trailers have electric service brakes. The current for working these



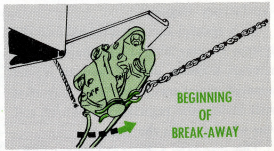
is supplied by the prime mover. One cable from trailer to prime mover—that's all there is.

But, right near the service receptacle on the trailer is an emergency break-away switch. The power supply for this baby comes from a 6-volt hot-shot battery that's carried on the trailer. She works like this—

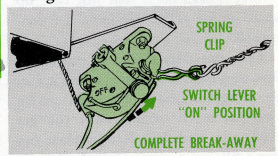
There's a chain from the break-away switch that's hooked to the prime mover. When you make your hook-up, this switch must be in the OFF position.



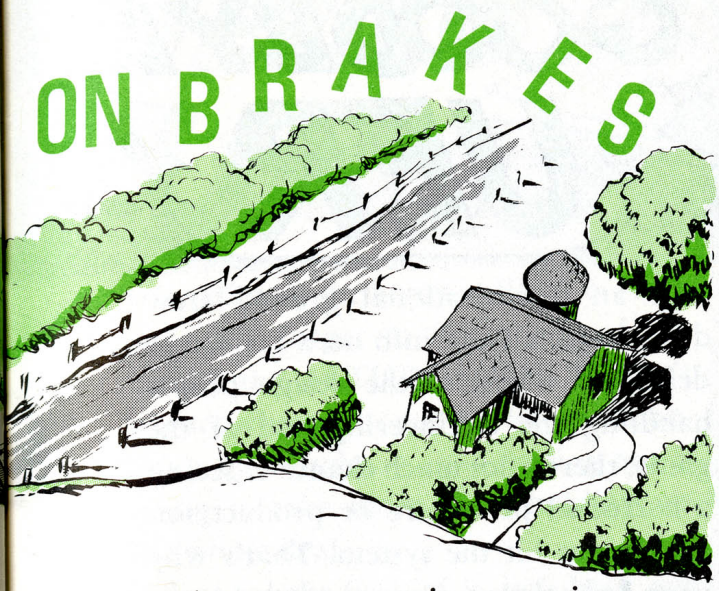
Now, let's say you're driving along and something happens—like the trailer and prime mover separate. The slack in the chain is taken up and the pull trips the break-away switch.



The emergency brakes go sc-r-e-e-e-c-h and a loud buzzer starts squawking. So, there you are—you know something's wrong.



It's a heckuva good idea to try this switch before you start out—just to make sure the li'l hot-shot isn't a cold turkey.



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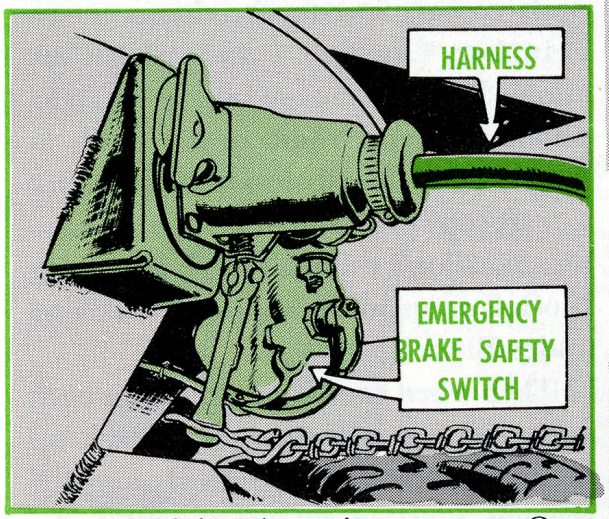

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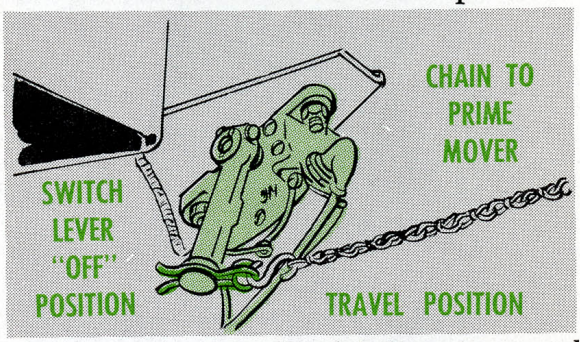

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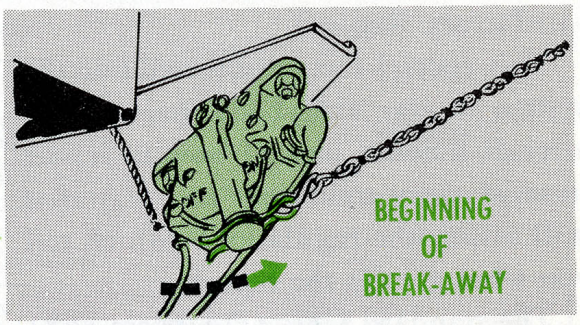

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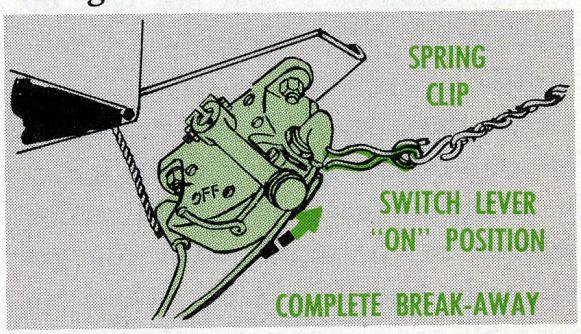

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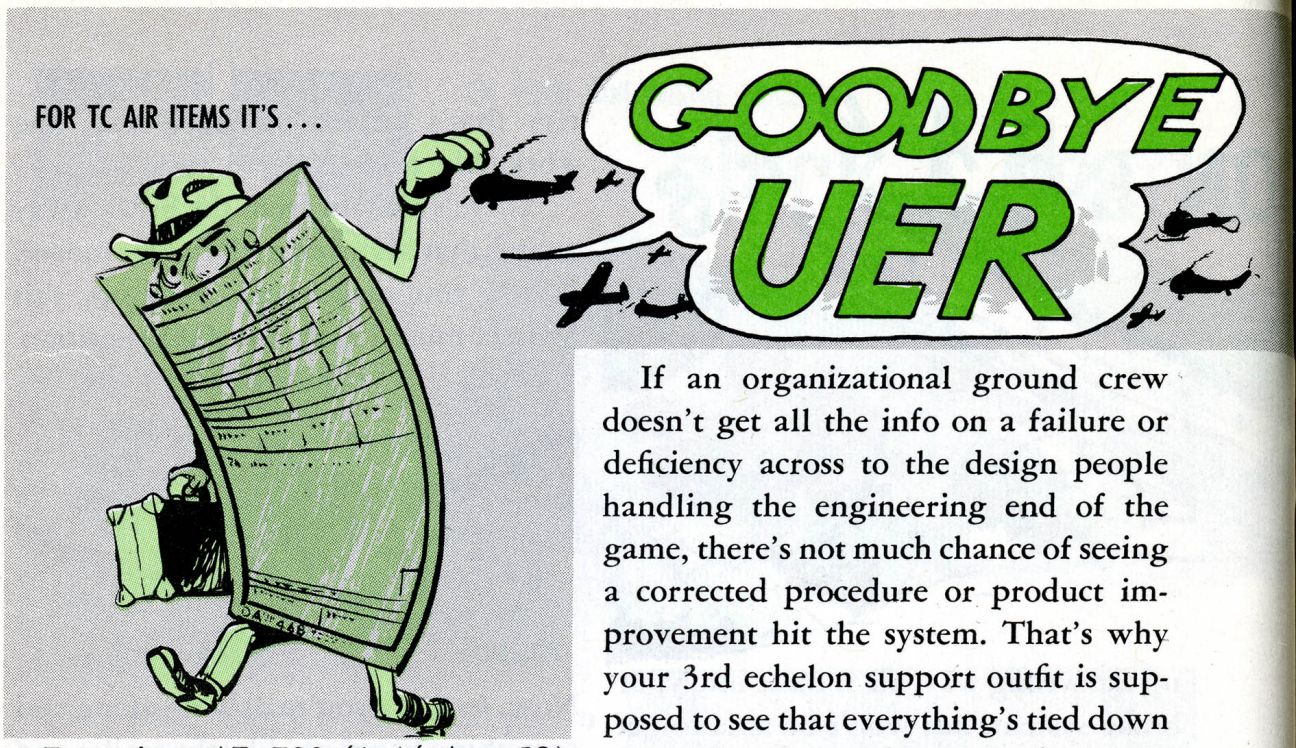

Ever since AR 700-41 (4 Aug 59) was born, defective Transportation Corps air items get written up on the new tailor-made DD Form 1275 (Unsatisfactory Report).

This special form was tossed into the system to give everybody maintaining aircraft a better idea of **how** to report unsatisfactory conditions in a way that will satisfy the regulations—which tell you **what** goes in the report.

The standard UER (DA Form 468) backed up by AR700-38 (4 Aug 59), is still in use for air items belonging to the other tech services—but it's got a couple —three blocks on it that just take up space as far as TC air items are concerned.

Even the older UER still confuses a few men on the best way to fill it out. So, it figures that a new form can be twice as much trouble until you get used to it. And, let's face it, when you don't fill out a report completely and accurately, you've just wasted everybody's time, including your own.

If an organizational ground crew doesn't get all the info on a failure or deficiency across to the design people handling the engineering end of the game, there's not much chance of seeing a corrected procedure or product improvement hit the system. That's why your 3rd echelon support outfit is supposed to see that everything's tied down right when they make out the final copy of your UR.

The more info you can pass on to them in your draft or working copy, the better 3rd echelon's completed form is going to look. Like the AR says, pen or pencil's just as good as a typewriter for draft copies. Speed's the thing.

In fact, Category 1 and 2 UR's are allowed to be moved along by telephone, teletype, radio or air mail, as long as you remember to follow up with a draft copy of the form as soon as possible. You don't even have to bother with Block 8 or any of those spaces with a ✓ under Block 4.

Then when you've got time to sit back and work up a draft copy to back up the info you've already passed on to 3rd echelon, you can fill out the 1275 the same as you would for a Category 3 UR. That means filling in everything except Blocks 1 and 3, which 3rd echelon fills out.

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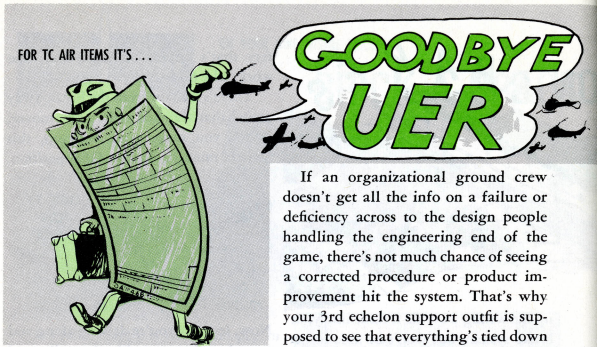

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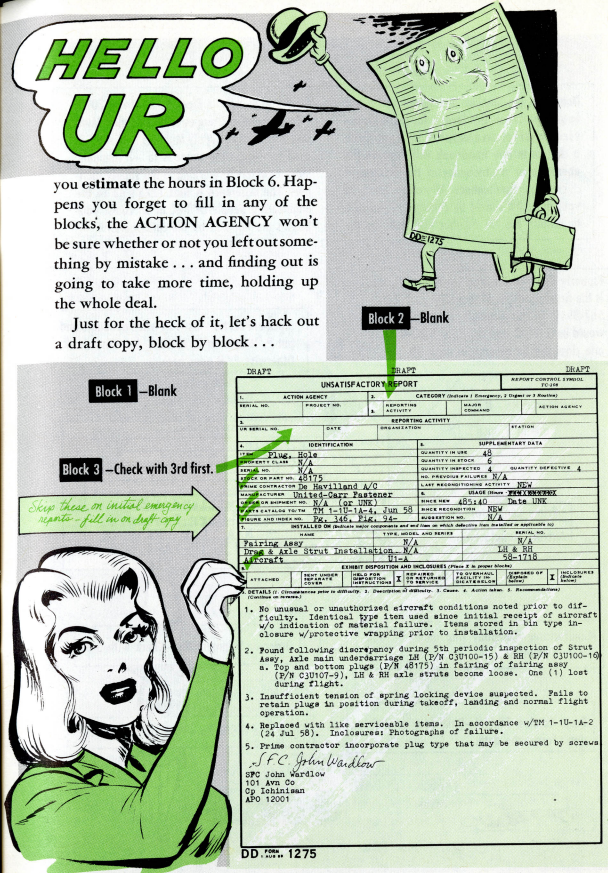
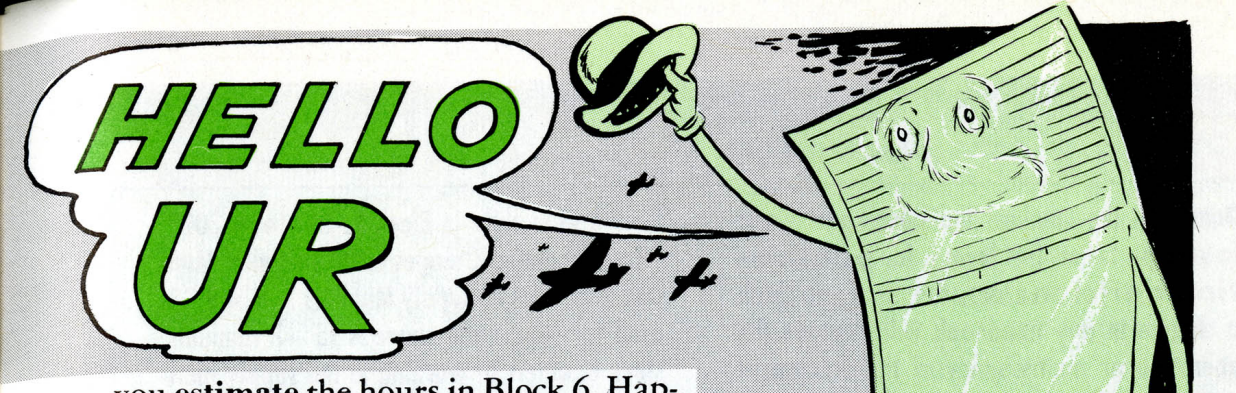




you **estimate** the hours in Block 6. Happens you forget to fill in any of the blocks, the ACTION AGENCY won't be sure whether or not you left out something by mistake . . . and finding out is going to take more time, holding up the whole deal.

Just for the heck of it, let's hack out a draft copy, block by block . . .

Block 1 —Blank

Block 2 —Blank

Block 3 —Check with 3rd first.

Skip these on initial emergency reports - fill in on draft copy

DRAFT DRAFT DRAFT

UNSATISFACTORY REPORT — REPORT CONTROL SYMBOL TC-208

1. ACTION AGENCY		2. CATEGORY (Indicate 1 Emergency, 2 Urgent or 3 Routine)			
SERIAL NO.	PROJECT NO.	3. REPORTING ACTIVITY	MAJOR COMMAND		ACTION AGENCY

3. REPORTING ACTIVITY			
UR SERIAL NO.	DATE	ORGANIZATION	STATION

4. IDENTIFICATION		5. SUPPLEMENTARY DATA	
ITEM	Plug, Hole	QUANTITY IN USE	48
PROPERTY CLASS	N/A	QUANTITY IN STOCK	6
SERIAL NO.	N/A	QUANTITY INSPECTED	4 QUANTITY DEFECTIVE 4
STOCK OR PART NO.	48175	NO. PREVOIUS FAILURES	N/A
PRIME CONTRACTOR	De Havilland A/C	LAST RECONDITIONING ACTIVITY	NEW
MANUFACTURER	United-Carr Fastener	6. USAGE (Hours - XXXXXXXXXX	
ORDER OR SHIPMENT NO.	N/A (or UNK)	SINCE NEW	485:40 Date UNK
PARTS CATALOG TO/TM	TM 1-1U-1A-4, Jun 58	SINCE RECONDITION	NEW
FIGURE AND INDEX NO.	Pg. 346, Fig. 94-	SUGGESTION NO.	N/A

7. INSTALLED ON (Indicate major components and end item on which defective item installed or applicable to)

NAME	TYPE, MODEL AND SERIES	SERIAL NO.
Fairing Assy	N/A	N/A
Drag & Axle Strut Installation	N/A	LH & RH
Aircraft	U1-A	58-1718

8. EXHIBIT DISPOSITION AND INCLOSURES (Place X in proper blocks)

ATTACHED		SENT UNDER SEPARATE COVER		HELD FOR DISPOSITION INSTRUCTIONS		REPAIRED OR RETURNED TO SERVICE		TO OVERHAUL FACILITY INDICATE BELOW		DISPOSED OF (Explain below)	X	INCLOSURES (Indicate below)

9. DETAILS (1. Circumstances prior to difficulty. 2. Description of difficulty. 3. Cause. 4. Action taken. 5. Recommendations) (Continue on reverse.)

1. No unusual or unauthorized aircraft conditions noted prior to difficulty. Identical type item used since initial receipt of aircraft w/o indication of material failure. Items stored in bin type inclosure w/protective wrapping prior to installation.

2. Found following discrepancy during 5th periodic inspection of Strut Assy, Axle main underdarriage LH (P/N C3U100-15) & RH (P/N C3U100-16)
   a. Top and bottom plugs (P/N 48175) in fairing of fairing assy (P/N C3U107-9), LH & RH axle struts become loose. One (1) lost during flight.

3. Insufficient tension of spring locking device suspected. Fails to retain plugs in position during takeoff, landing and normal flight operation.

4. Replaced with like serviceable items. In accordance w/TM 1-1U-1A-2 (24 Jul 58). Inclosures: Photographs of failure.

5. Prime contractor incorporate plug type that may be secured by screws

SFC John Wardlow
SFC John Wardlow
101 Avn Co
Cp Ichinisan
APO 12001

DD FORM 1 AUG 66 1275

Item—Use the smallest individual part name in your parts list. This form is for **publication deficiencies,** too. So if you think a change in any handbook will improve the operation or maintenance of the equipment . . . or the Maintenance Allocation Chart in your parts list should be changed . . . be sure to include the TM number and date on the form and explain in Block 9. (DA Form 2028, "Recommended Changes to DA Technical Manual, Parts lists or Supply Manuals 7, 8 or 9," is used for suggesting changes to —P manuals, stock numbers or wording in the supply manuals. The difference is that 1275's go to the engineering people at TMC in St. Louis; your 2028's are handled by the catalogers.)

Property Class—If the part's got an FSN, this is the first four digits of that FSN . . . **1234**-567-8910. In this example, the entire group would be **1200** and the class **1234**. Only one class can be covered in each UR.

Stock or Part No.—Use FSN when available and put P/N in para 2, Block 9, for cross check. Otherwise P/N goes here.

Serial No.—It has one or it hasn't.

4

4.	IDENTIFICATION
ITEM	Plug, Hole
PROPERTY CLASS	N/A
SERIAL NO.	N/A
STOCK OR PART NO.	48175
PRIME CONTRACTOR	De Havilland A/C
MANUFACTURER	United-Carr Fastener
ORDER OR SHIPMENT NO.	N/A (or UNK)
PARTS CATALOG TO/TM	TM 1-1U-1A-4, Jun 58
FIGURE AND INDEX NO.	Pg. 346, Fig. 94-

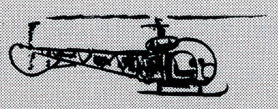
Prime Contractor—Aircraft manufacturer.

Manufacturer—Company that made the subject item of report.

Order or Shipment No.—Check with 3rd.

Parts Catalog TO/TM—Dash four or 20P . . . don't forget the date.

Figure and Index No.—Page number, too.



√ Skip these on initial emergency reports - fill in on draft copy

Block 5

Quantity in Use—Operating or installed.

5 Quantity in Stock—On the shelf and **not** in use.

5 Quantity Inspected—Better inspect them all if flight safety's affected.

5 No. Previous Failures—Have to be due to same cause and limited to last 12 months. Doesn't matter if same failure's been reported before.

5 Last Reconditioning Activity—DD Form 829-2, "Significant Historical Data," is good info source. Could be depot, contractor or 3rd echelon support activity. Date's important, unless equipment's NEW.

5 Quantity Defective—Don't count failures caused by negligence or attributed to different cause than the one you're reporting.

Block 6

Acceptance dates, if you know 'em. Ask 3rd for suggestion numbers.

5. SUPPLEMENTARY DATA			
QUANTITY IN USE	48		
QUANTITY IN STOCK	6		
QUANTITY INSPECTED	4	QUANTITY DEFECTIVE	4
NO. PREVOIUS FAILURES	N/A		
LAST RECONDITIONING ACTIVITY	NEW		
6. USAGE (Hours - ~~XXXXXXXXXX~~			
SINCE NEW	485:40	Date UNK	
SINCE RECONDITION	NEW		
SUGGESTION NO.	N/A		

7. INSTALLED ON (Indicate major components and end item on which defective item installed or applicable to)		
NAME	TYPE, MODEL AND SERIES	SERIAL NO.
Fairing Assy	N/A	N/A
Drag & Axle Strut Installation	N/A	LH & RH
Aircraft	U1-A	58-1718

8. EXHIBIT DISPOSITION AND INCLOSURES (Place X in proper blocks)									
ED		SENT UNDER SEPARATE COVER		HELD FOR DISPOSITION INSTRUCTIONS	X	REPAIRED OR RETURNED TO SERVICE		TO OVERHAUL FACILITY INDICATE BELOW		DISPOSED OF (Explain below)	X	INCLOSURES (Indicate below)

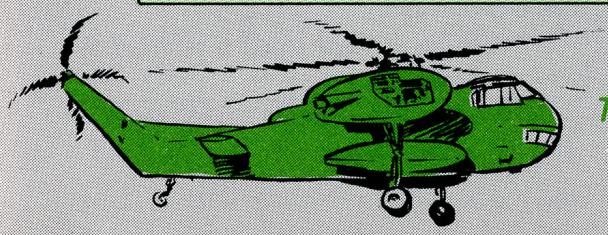
Block 7

7 Name—Step-by-step identification, going from next larger assembly to major component to end item.

7 Type, Model and Series—End item's usually A/C, but components don't always have a type, model or series designation . . . so they're either N/A or UNK. No blanks here.

Block 8

Get the word from 3rd and explain in para 4, Block 9.



7 Serial No.—Include location info when possible . . . like station number, right or left side, engine number, fore or aft, upper or lower, etc.

Block 9

Paragraph this block by the numbers. Lots of white space here for a reason. Put in everything and anything you can think of . . . better to have too much than too little.

Par 1. Anything unusual during previous flights?
Any pubs involved?
Done any troubleshooting on a system?
Got storage problems?
Material Spec numbers involved?

Par 2. Use complete nomenclature and FSN (P/N) in description.
Locate structural parts.
Attach copy of suggestion, if there was one.
This UR related to an accident?

✓ Skip these on initial emergency reports – fill in on draft copy.

9

8. ✓ EXHIBIT DISPOSITION AND INCLOSURES (Place X in proper blocks)

ATTACHED		SENT UNDER SEPARATE COVER		HELD FOR DISPOSITION INSTRUCTIONS		X	REPAIRED OR RETURNED TO SERVICE		TO OVERHAUL FACILITY INDICATE BELOW		DISPOSED OF (Explain below)		X	INCLOSURES (Indicate below)

9. DETAILS (1. Circumstances prior to difficulty. 2. Description of difficulty. 3. Cause. 4. Action taken. 5. Recommendations) (Continue on reverse.)

1. No unusual or unauthorized aircraft conditions noted prior to difficulty. Identical type item used since initial receipt of aircraft w/o indication of material failure. Items stored in bin type inclosure w/protective wrapping prior to installation.

2. Found following discrepancy during 5th periodic inspection of Strut Assy, Axle main undercarriage LH (P/N C3U100-15) & RH (P/N C3U100-16)
   a. Top and bottom plugs (P/N 48175) in fairing of fairing assy (P/N C3U107-9), LH & RH axle struts become loose. One (1) lost during flight.

3. Insufficient tension of spring locking device suspected. Fails to retain plugs in position during takeoff, landing and normal flight operation.

4. Replaced with like serviceable items. In accordance w/TM 1-1U-1A-2 (24 Jul 58). Inclosures: Photographs of failure.

5. Prime contractor incorporate plug type that may be secured by screws

SFC John Wardlow

SFC John Wardlow
101 Avn Co
Cp Ichinisan
APO 12001

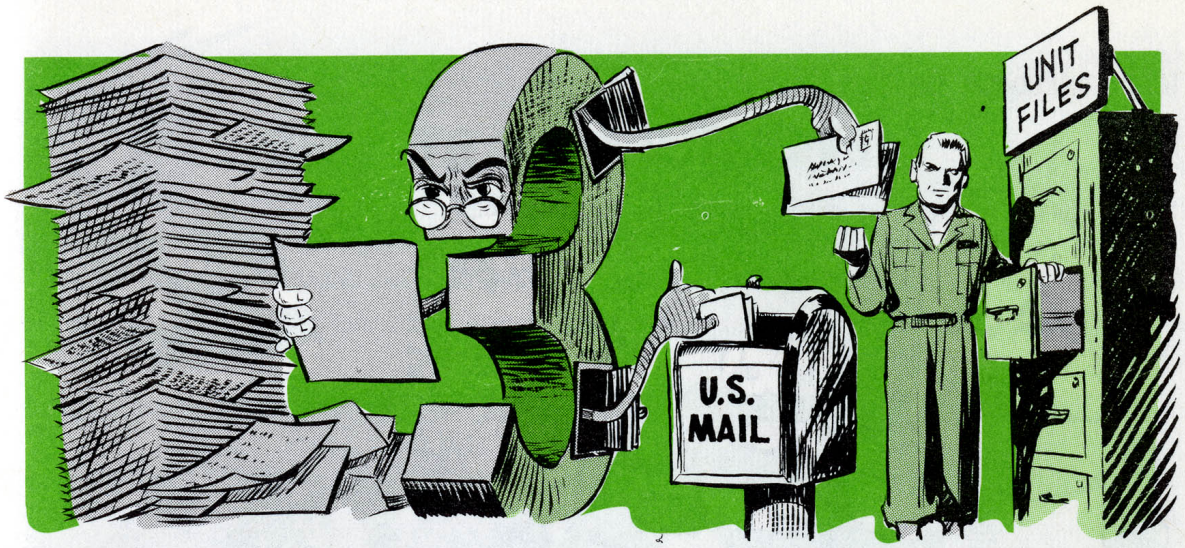
DD FORM 1 AUG 58 1275

Par 3. Everything suspected included?

Sign down here with your name, organization and location.

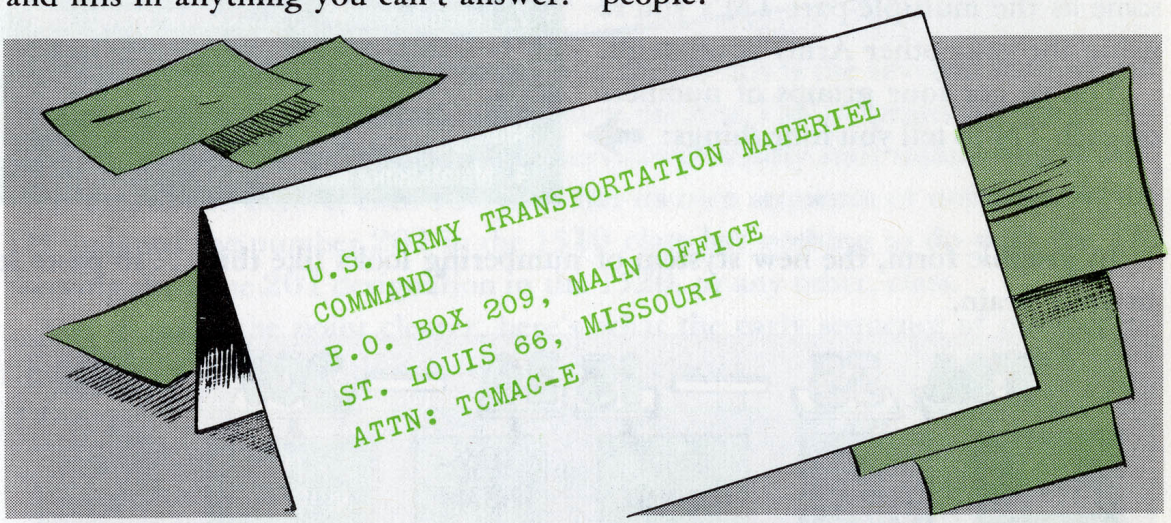
Par 4. Exhibit info.
Describe or show repair if returned to service.

Par 5. Operating cautions, design or pub changes necessary?



If it's engine trouble, tack on numbered answers to all 28 questions in the "Reciprocating Engines Checklist" back in Appendix II of the AR.

Now that you're finished with your draft copy, 3rd echelon checks it over and fills in anything you can't answer. Then they give you a carbon of their completed 1275 along with the original draft you gave them. Both copies go in your file. Meanwhile, 3rd passes the number one copy of the completed 1275 to the new address for the engineer people:



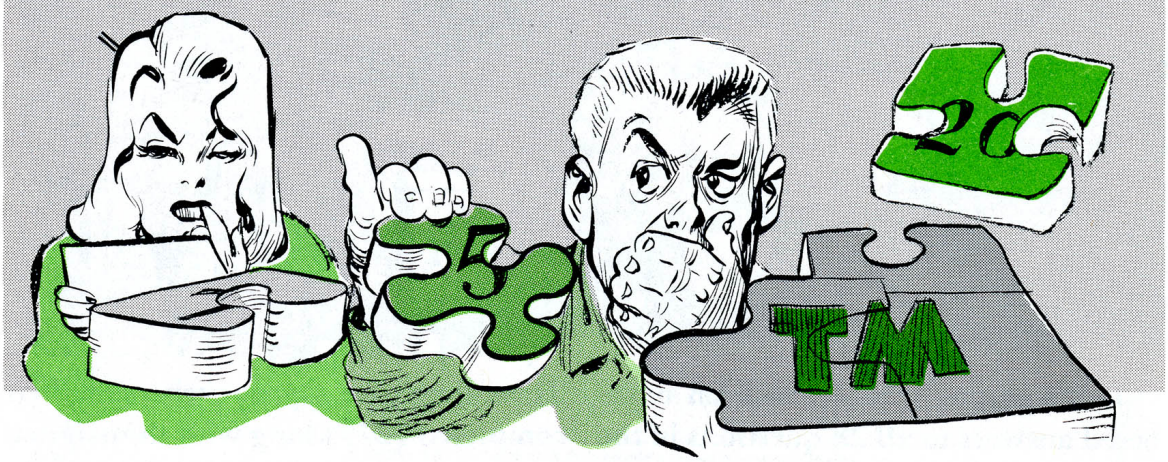
After that you keep in touch with your support people for word of an answer from TMC. If your UR is one of many on the same subject, chances are you'll see the fix show up in the UR Digest of the TB AVN 23-5-series as an interim deal.

When you think about it a little, this new UR does a pretty fair job of spelling out what's wanted from you. The hardest part is gathering up the info for the 1275 . . . and your support outfit helps you there.

The UR's the official way to enjoy yourself with one of the Army's favorite pastimes . . . griping. Like lots of these engineer types in Army maintenance keep saying, the product could be improved if somebody'd complain on paper instead of over a glass of beer. (If you don't like the new regs or 1275, complain about them, too.)

TC AIR INTRODUCES THE . . .

NEW MULTI-PART TM'S



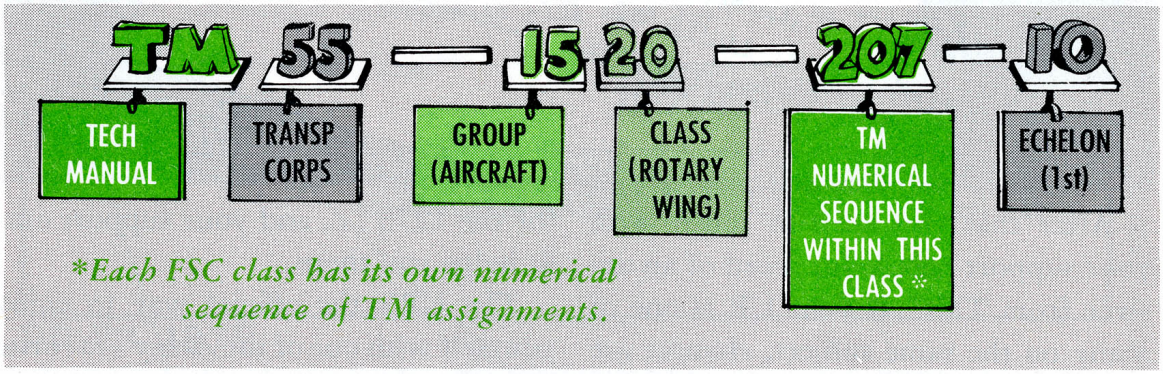
The days of the TM 1-series publications are numbered.

Starting with the TM's covering the Iroquois (HU-1A), you'll be working with a TM **55**-series that's basically the same as the multiple-part TM's you're using for your other Army equipment.

You've got four groups of numbers on each TM to tell you four things: ➡

1. Tech service (TM 1— was only a temporary designation to separate AFTO type pubs from the Army style manuals).
2. Federal Supply Classification group and class.
3. Separate number for each manual in the same group and class.
4. Maintenance echelon.

In graphic form, the new stystem of numbering looks like this . . . so paste it in your brain.

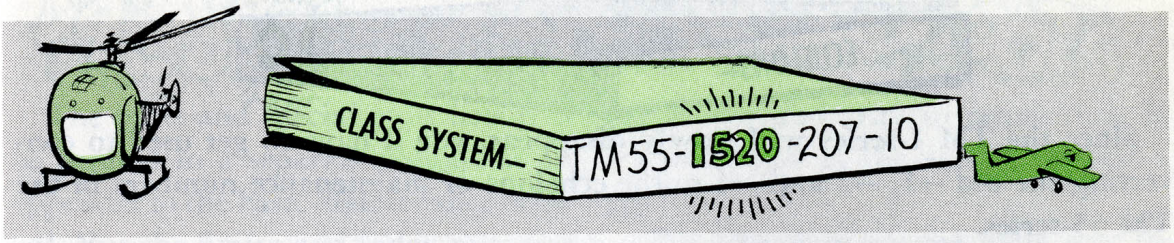


No sweat in following the **TM 55** part of it, but you'll have to get used to the **group** and **class.** The usual groups you'll be seeing on aircraft pubs are:

Group 15—Aircraft and Airframe Structural Components.

Group 16—Aircraft Components and Accessories.

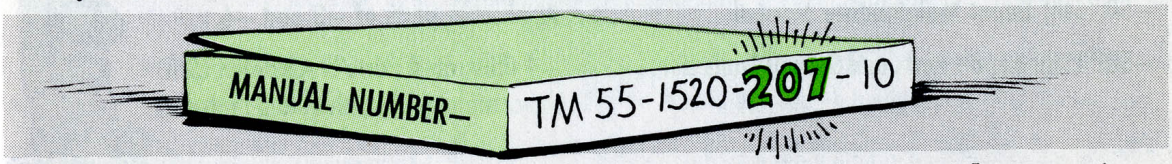
Group 17—Aircraft Launching, Landing and Ground Handling Equipment.



This is a real class-conscious system, since each of these groups is broken down into separate classes covering specialized areas of equipment. Let's take Group 15 for an example:

Class	Title	Class	Title
1510	Aircraft, Fixed Wing	1540	Gliders
1520	Aircraft, Rotary Wing	1550	Drones
1530	Aircraft, Lighter Than Air	1560	Airframe Structural Components

SB 708-401 gives you the detailed list of groups and classes; SB 708-301 has the system breakdown by equipment nomenclature.



The **207** part of the TM example given means this is the **seventh** manual put out in this group and class. That's because the first TM TC prints in each group and class starts at **201**. The other Tech services generally start numbering at 200.

As mentioned before, each FSC class has its own sequence of numbers. So the TM assigned the number **201** in the 1510 class has nothing to do with the TM carrying the same **201** designation in the 1520, or any other, class.

Just to make the point clearer, here's what the early sequence of number assignments looks like in these two particular classes.

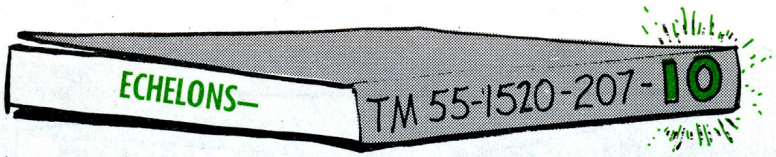
FSC 1510 (Fixed Wing)

1. L-23=201
2. L-19=202
3. L-20=203
4. AO-1=204
5. U-1A=205

FSC 1520 (Rotary Wing)

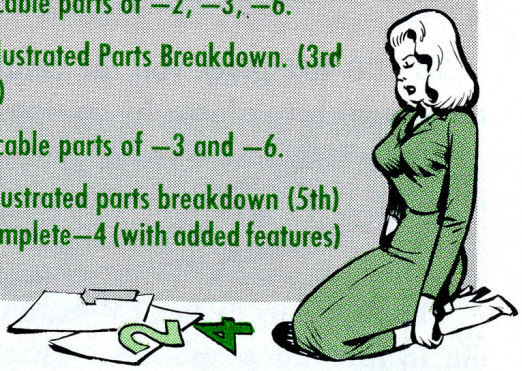
1. H-19=201
2. H-34=202
3. H-37=203
4. H-13=204
5. H-21=205
6. H-23=206
7. HU-1A=207
8. HU-1B=208
9. HC-1=209

The sequence numbers will continue to grow for each class as more TM's become converted to the multi-part publication system.



Since the TM 1-series will slowly disappear, you'll have to get used to converting the old —1, —2 and —4 to the echelons of maintenance numbers in the TM 55-series.

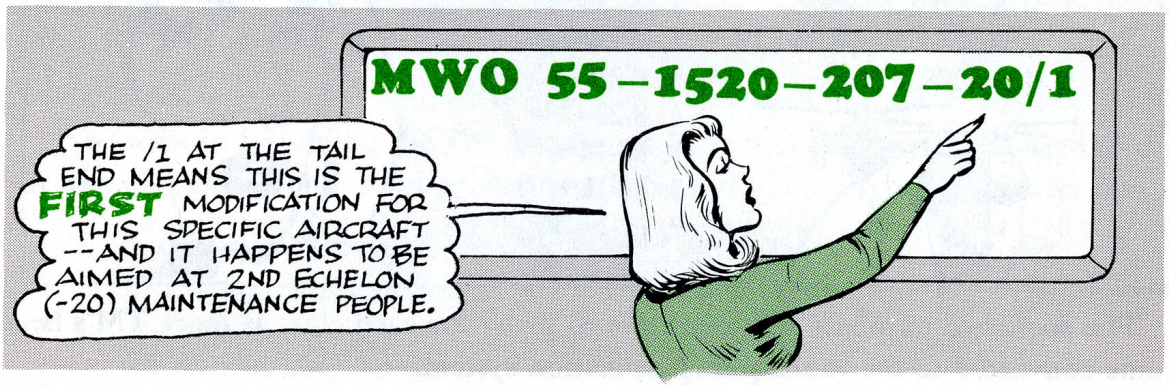
TM 55-series	TM 1-series
—10 (1st) Operator's Manual	—1 Flight Handbook and applicable parts of —5 and —6.
—20 (2nd) Organizational Maintenance Manual	—2 Maintenance Instructions and applicable parts of —3, —6.
—20P (2nd) Repair Parts and Special Tools List	—4 Illustrated Parts Breakdown. (2nd)
—34 (3rd & 4th) Field Maintenance Manual	Applicable parts of —2, —3, —6.
—34P (3rd & 4th) Repair Parts and Special Tools List	—4 Illustrated Parts Breakdown. (3rd & 4th)
—50 (5th) Depot Maintenance Manual	Applicable parts of —3 and —6.
—50P (5th) Repair Parts and Special Tools List	—4 illustrated parts breakdown (5th) the complete—4 (with added features)



General type TM's have no maintenance echelon designation. They just carry the tech service number followed by a three-digit deal ranging from 200 through 999 . . . like the new TM 55-403, "Fundamentals of Army Helicopter Maintenance," and TM 55-404, "Fundamentals of Army Airplane Maintenance."

Each maintenance TM will carry instructions on both the powerplant and airframe for that aircraft along with related info . . . such as the applicable parts of the —3 or —6 and any other parts of the TM 1-series necessary.

The Time Compliance TM 1 will be replaced by the MWO (Modification Work Order) system of writing up modifications. For example, one of the first to come out for the Iroquois (HU-1A) looks like this:



PARTS LIST AND SPECIAL TOOLS—

The parts and special tools lists will be printed in a separate volume as an appendix to the basic maintenance manual. But the figure and index numbers will be listed identically in the —20P, —34P and —50P for each piece of equipment.

The only difference will be in the listings. All listings, which accompany the illustrations by number, will be in the —20P when you're authorized that piece at 2nd echelon. So, the page listing is the authority to requisition. If it's not listed in the —20P, you can't get it.

The listing of special tools will be limited to those each echelon's authorized to use—which ties in with which repair jobs the Maintenance Allocation Chart (MAC) allows for each echelon.

Since the aviator doesn't normally pull maintenance all 1st echelon maintenance and tool lists are part of 2nd echelon responsibility.

THE APPENDIX DEAL—

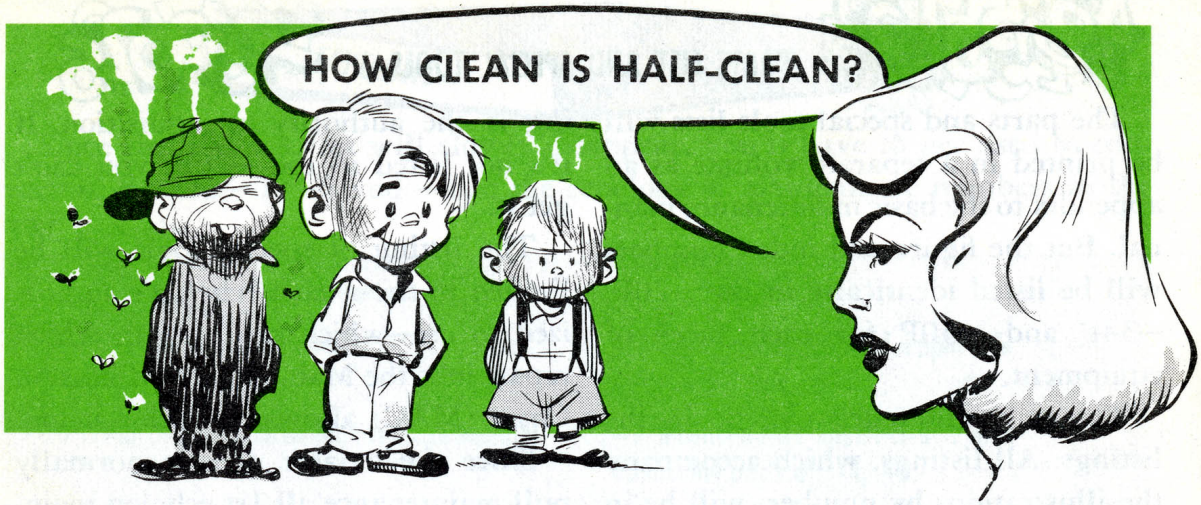
Each parts and special tools list (—20P, —34P and —50P), though printed separately, is actually the Appendix III for each basic manual (—20, —34 and —50). The first two are part of the basic manual . . . Appendix I being the reference publications for that maintenance echelon and Appendix II's the MAC. Everybody's MAC is in the —20, regardless of echelon.

DISTRIBUTION—

The new TM 55-series, in case you're wondering, will be passed out this way:

1. Aviators can get a —10 to keep, just like the flight handbooks.
2. Aircraft "G" file will have the —10, —20 and —20P.
3. Field maintenance support activities will get the —10, —20, —20P, —34 and —34P.
4. Only TC headquarters and TMC are authorized the —50 and —50P.

As with any changeover deal, you're supposed to give it a fair shake and, after looking it over real hard, come up with your comments. Say you got some already? Well, good . . . bombs away. The target for this mission is TCMAC-E at TMC, St. Louis.



Dear Editor,

The TM on our Austin-Western hydraulic road grader says "drain and clean entire hydraulic system at least twice a year".

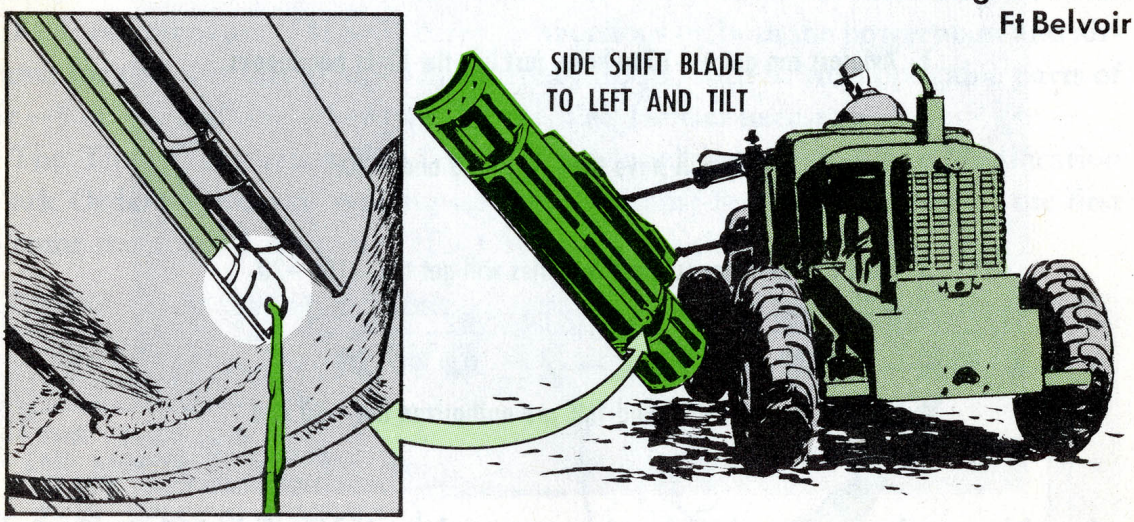
We found out you only half-clean the system when you just drain, flush and refill the hydraulic oil tank. Since the blade assembly sits lower than the tank, you still leave dirty oil in the blade rams—where grit and condensation from the whole system settles.

So now, when our grader is due for a hydraulic oil drain and flush, we've got a system that's simple as dumping branch water out of a boot.

Before we shut down for the service, we side shift the blade to the left—then tilt it like you would for working on a slope. Tilted like that, it's no sweat to pull the drain plug and watch the old oil run out of the blade ram.

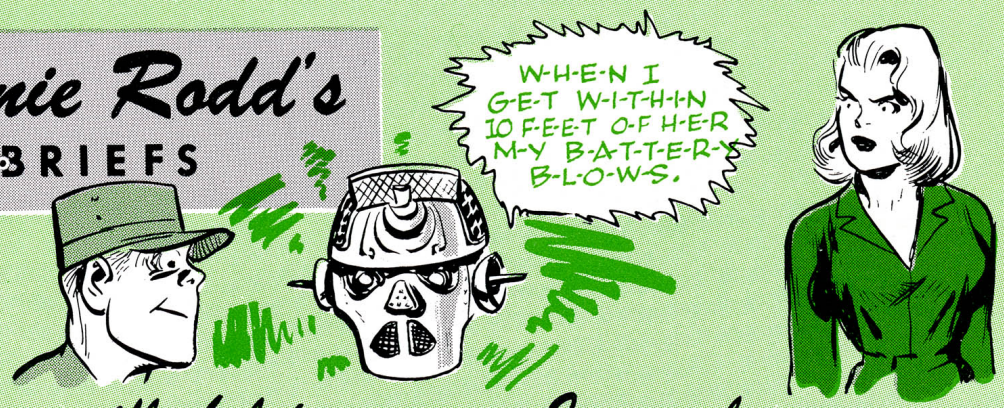
Takes only a little longer, the blade works better, and no inspector is going to gig us for dirty oil.

M/Sgt D. Firkin
Ft Belvoir



(Ed Note—Good thinking. If anybody sees one of those graders with a leg up, he'll know what's going on.)

Connie Rodd's BRIEFS



Your rifle holster

If your rigs or trucks need covers and universal rifle bracket assemblies described in TB 9-2300-209-20 (11 June 59) and TB Eng 351 (22 Sept 59), you'll have to get a justification of requirement from your CO. It's a good idea to quote your TOE and line item number for the equipment the rifle holster goes on.

Don't fight it

When maintenance or supply manuals tell you to replace an entire subassembly or assembly at one time, go along with them. Chances are you think you're saving money by ordering a single part and installing it yourself. But you may end up throwing an entire assembly out of adjustment by taking it apart and putting it back yourself—not to mention the extra time and tools needed for those hard-to-get-at jobs.

Puzzled by LO?

Some M103-series tank men have been puzzled because LO 9-2350-214-10 (27Jan60) doesn't say it supersedes any other LO. Here's why: It's for Tank, Combat, Full Tracked: 120-mm Gun, M103A1 (T43E2). Remember that LO 9-2350-206-10 (25 Aug 59) is still the LO you use for the M103 (T43E1).

In any language

It may be in French, but a guy working around an SS-10 guided missile system can believe the words—"Ne Pas Toucher"—when he comes across them. They mean—"Do Not Touch"—and just that. You'll run into the "hands off" bit whenever the guy who made the equipment doesn't want you to mess around with certain parts.

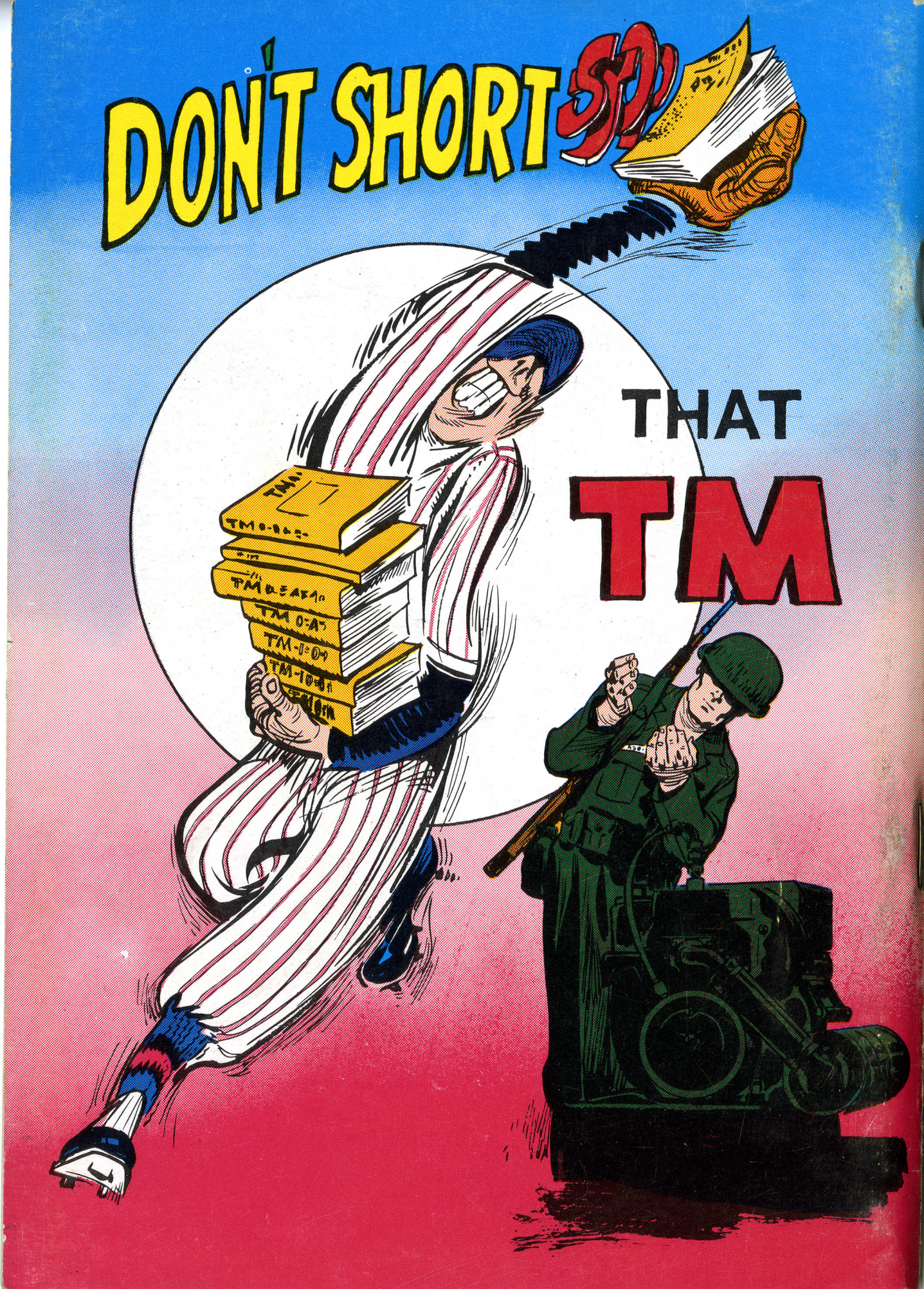
Know your colors

It's just as important to know your color codes for SS-10 guided missiles as it is with ammo. So get to know what the colors mean before you start handling the missiles. The scoop is in your TM. That way you won't have the close call one outfit had when it was using a shaped charge (olive drab) for an inert warhead (blue) until a sharp-eyed guy spotted the foulup.

Getting in

If you've been having troubles with the commander's, driver's and front hatch doors of your M42 twin 40's you ought to look up MWO 9-2350-202-20/3 (28 Dec 59). This urgent modification clues you in on getting rid of this problem on Dusters with serial number 1662 and below.

Would You Stake Your Life on the Condition of Your Equipment?


DON'T SHORT
THAT
TM